The Journal
OF THE KANSAS MEDICAL SOCIETY

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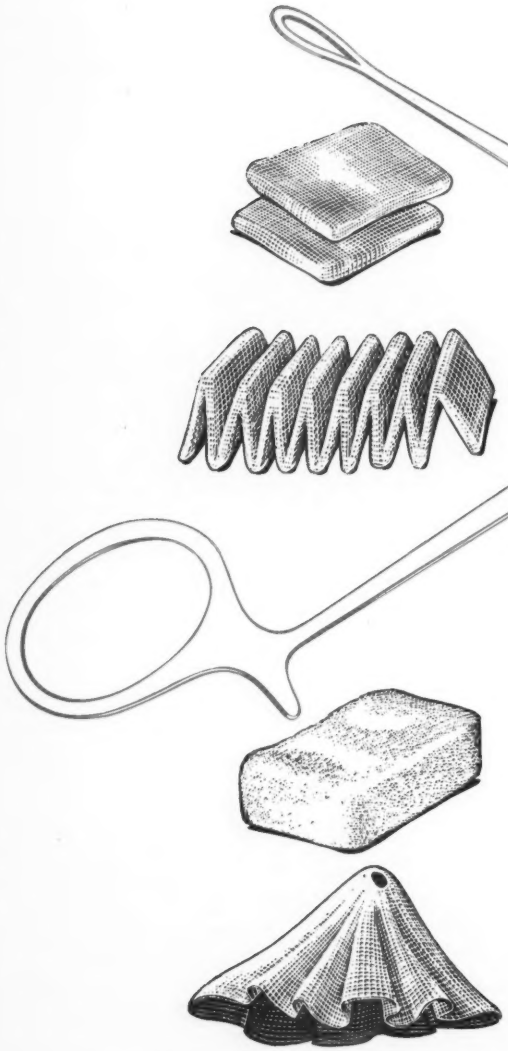

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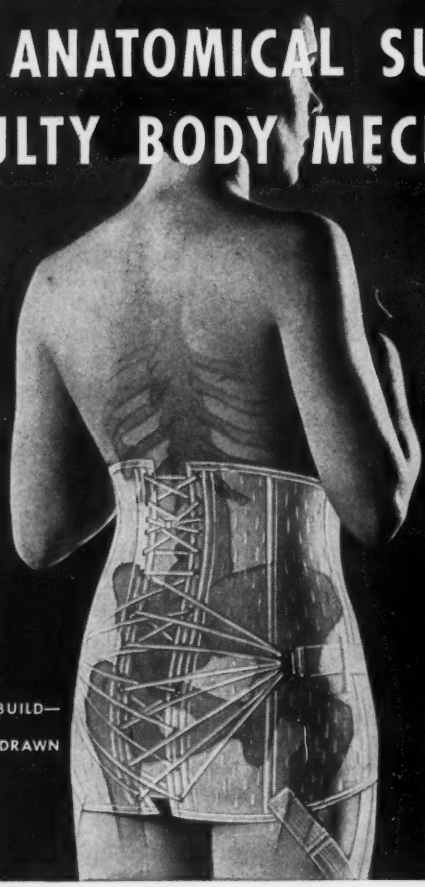

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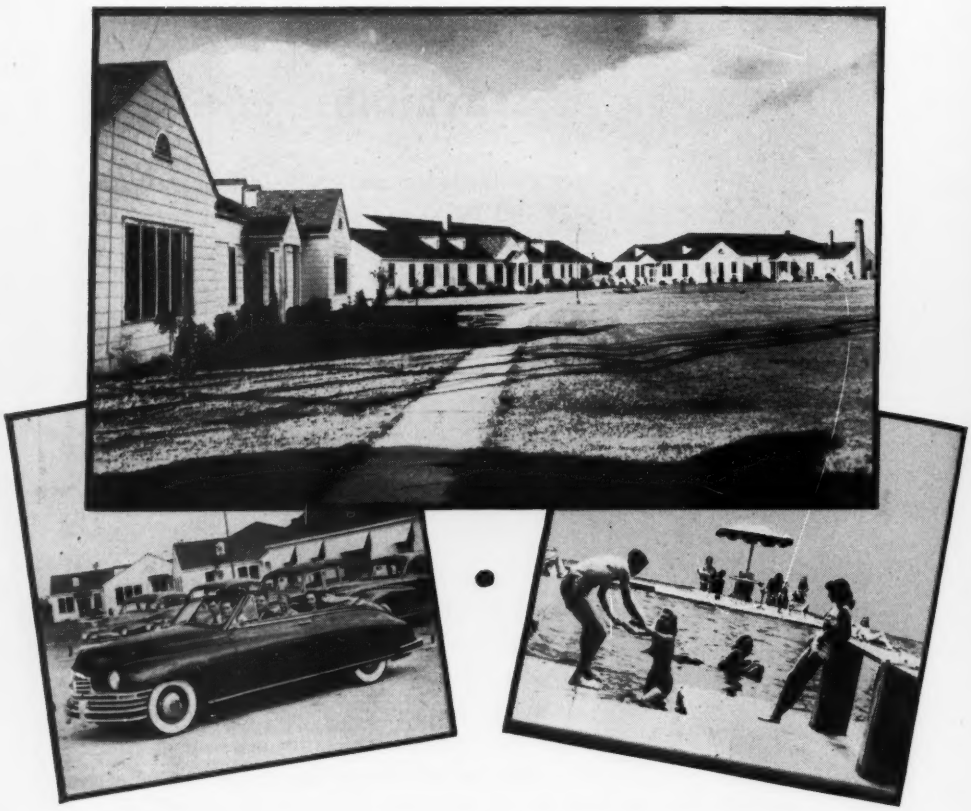

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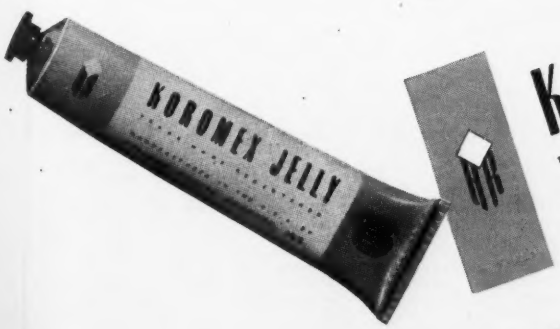

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[1] McLester, J. S.: Nutrition and Diet in Health and Disease, ed. 4, Philadelphia and London, W. B. Saunders Company, 1943.

[2] Kunde, M. M.: The Role of Hormones in the Treatment of Obesity, Ann. Int. Med. *28*:971 (May) 1948.

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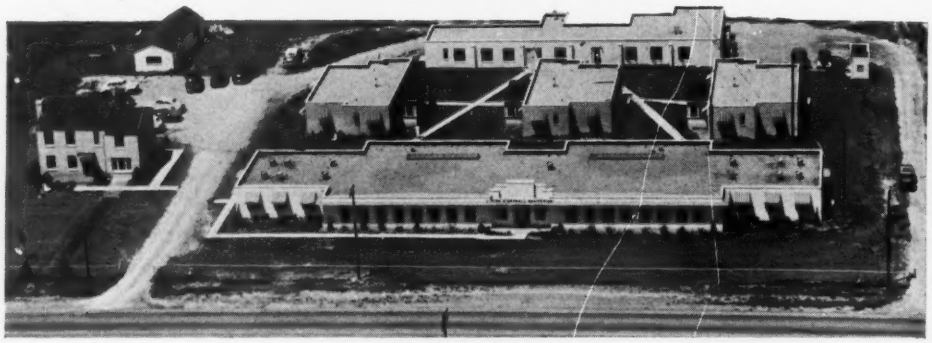

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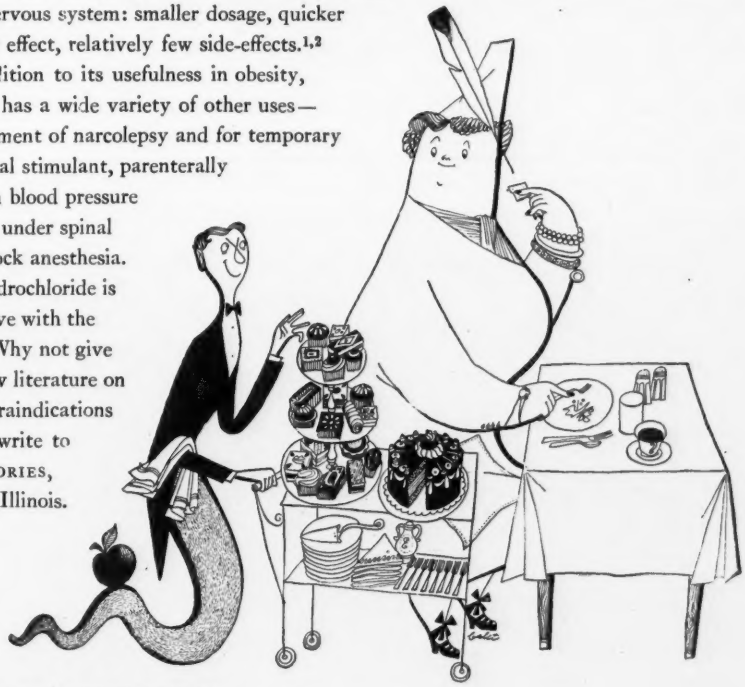

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1. Ivy, A. C., and Goetzl, F. R. (1943), d-Desoxyephedrine; A Review, War. Med., 3:60, January.
2. Davidoff, E. (1943), A Comparison of the Stimulating Effect of Amphetamine, Dextroamphetamine and Dextro-N-Methyl Amphetamine (Dextro-Desoxyephedrine), Med. Rec., 156:422, July.

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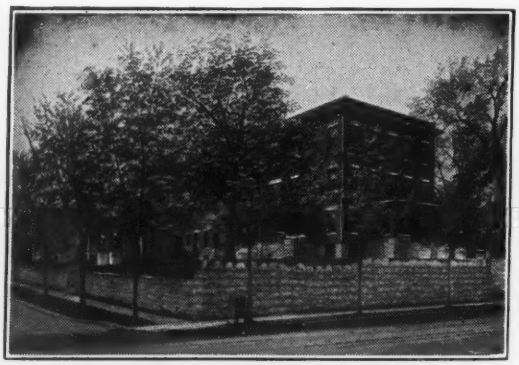

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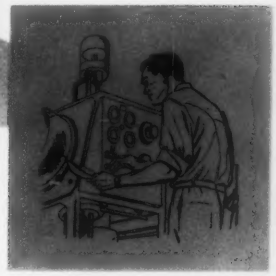

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A Letter from Dean Franklin D. Murphy

For the Third Annual University of Kansas School of Medicine Issue of the Journal

To the Members of the Kansas Medical Society:

I wish to take this opportunity to thank the entire membership of the Society for your indispensable efforts, individual and collective, in bringing to a successful conclusion the campaign to enlarge the Kansas Medical School.

I am sure that the activities prior to the successful legislative action have been, and will continue to be, productive of a good many mutual benefits. The increasingly close cooperation between the Society and the School of Medicine bodes well for rapid and healthy developments in Kansas medicine. Through the medium of this program, the people will become progressively more aware of the fact that physicians of our state have a positive approach to the problems of health. I sincerely believe that with all agencies and individuals concerned with health working together, it can be clearly demonstrated that many health problems in Kansas can be resolved by a cooperative effort on the part of Kansans alone.

Particularly am I grateful that the work of the past three or four months has made it possible for me to meet and learn to know so many of you personally, and I sincerely look forward to the opportunity of visiting with you at the Medical Center in the months and years to come.

The successful conclusion of this recent campaign really only signals the beginning of a long-range effort, the success of which will depend upon coordination, cooperation, and mutual advice and counsel among many groups but, most important of all, between the members of the Kansas Medical Society and the School of Medicine. Our recent joint project is clear proof that not only can we successfully work together but that it is an altogether pleasant, satisfying and fruitful experience.

I look forward with great enthusiasm and optimism to the future of Kansas medicine.

Cordially yours,

Franklin D. Murphy, M.D.
Dean, Kansas Medical School

Uremia in Obstructive Uropathy

William L. Valk, M.D.*

Kansas City, Kansas

Uremia may be defined as the symptom complex which occurs in conjunction with azotemia resulting from disturbances in the functioning status of the kidneys. It is the purpose of this paper to consider the uremic manifestations found in association with obstructive nephropathy and the supportive and the corrective therapy of the associated renal insufficiency.

The Symptomatology of Uremia

The symptoms and signs of uremia may be divided into six main groups. They are as follows:

1. Gastrointestinal: nausea, vomiting, epigastric distress, diarrhea, and dehydration.
2. Central nervous system: apathy, mental depression, headache, drowsiness, coma, visual disturbances and convulsions.
3. Neuromuscular: increased neuromuscular irritability, muscular twitchings, hyperactive reflexes, and cardiac irregularities.
4. Circulatory: cardiac failure, pericarditis, and hypertension.
5. Hematopoietic: anemia.
6. Cutaneous: petechiae, urticaria, and eczematoid dermatitis.

A century ago, Bright postulated that toxic agents were responsible for the uremic syndrome and since his day, investigations have reaffirmed this opinion Each of the following substances has been considered the essential agent in the production of the uremic complex—urea, creatinine, phenol, acid bodies, guanidine, inorganic phosphates and sulphates, as well as various unknown toxic substances. Renal insufficiency is indicated by an elevation of the blood nitrogen level, and the degree of nitrogen retention has often been considered an index of the extent of renal failure. It is understandable, therefore, that excessive blood nitrogen has been regarded as the toxic agent in uremia. However, we know that the blood nitrogen level does not always reflect the clinical status of the patient. One patient may appear well while possessing a blood NPN of 125 mgm. per cent, while another with a blood NPN of 90 mgm. per cent may be comatose and have uremic convulsions. Furthermore, elevations of the blood nitrogen level produced by the ingestion of exogenous urea are not accompanied by the symptoms of uremia or, in fact, any untoward symptoms. It is, therefore, obvious that excessive blood nitrogen does not directly contribute to the uremic syndrome.

*From the Department of Surgery, Section of Urology, University of Kansas Medical Center.

The cause of the uremic symptoms must be a blood constituent whose concentration is invariably abnormal during the occurrence of the syndrome and, further, whose abnormal blood level roughly parallels the severity of the uremic state. Analyses of the blood constituents in patients having nitrogen retention both with and without the uremic syndrome disclose that abnormalities in the acid base balance are the only dislocations which are invariably present in the uremic state, and that severe degrees of acidosis associated with nitrogen retention are always accompanied by severe uremia.

Two hundred patients with nitrogen retention were observed on the Urology Service at University Hospital. Twenty-five (12½ per cent) of these patients displayed the symptoms of renal insufficiency and uremia. All of these patients were found to be in a state of acidosis when observed by CO_2 combining power determinations. The remainder of these patients in nitrogen retention (175 cases) did not exhibit symptoms of uremia nor were they found to be in acidosis. The uremic patients showed CO_2 combining powers varying from 10-35 volumes per cent and although the degree of acidosis accurately paralleled the severity of the uremic symptoms, there was no correlation between the CO_2 combining power level and the degree of nitrogen retention. The CO_2 combining power is a measure of the available base in the blood plasma and 60 volumes per cent is the normal value. We consider a CO_2 combining power of 30-40 volumes per cent indicative of mild acidosis, 20-30 volumes per cent of a mild acidosis, and 10-20 volumes per cent of severe acidosis. Death is imminent when the CO_2 combining power is at 10-15 volumes per cent and recovery has rarely been seen at levels below 10 volumes per cent.

The Mechanism of Production of Renal Dysfunction in Obstructive Nephritis

Without entering into the disputed problems of renal physiology, let us consider what occurs in urologic patients to cause renal dysfunction and abnormal blood chemistry. Urinary obstruction causes first of all an increased hydrostatic pressure above the point of impass. This is transmitted in a retrograde manner, eventually exerting an effect on the tubules and glomeruli. Since the capillary blood pressure in the glomerular tuft, which drives the glomerular filtrate through the endothelial membrane is equivalent to about 60 mm. of Hg., and the

colloid osmotic pressure holding the fluid within the capillary equals about 30 mm. of Hg, the effective filtration pressure is 30 mm. of Hg. As the normal glomerular filtration rate is 125 cc./minute (clearance of inulin), it follows that 180 liters of glomerular filtrate are formed each 24 hours. The composition of the filtrate is identical with blood plasma except for the absence of proteins. These large protein molecules cannot pass through the glomerular filter so remain in the plasma and play an important part in the tubular reabsorption of 90 per cent of the water of the filtrate. Reabsorption of needed blood constituents also occurs in the proximal tubules as needed to maintain normal blood levels. Although there is some reabsorption of the true urine waste products, namely, urea, creatinine, uric acid, phosphates and sulphates, there is always greater excretion than retention in health. In obstructive uropathy, there occurs an increase in intratubular pressure and a decrease in the effective filtration pressure with resulting decrease in formation of glomerular filtrate and retention of nitrogen, phosphates, and sulphates in the blood.

As has been previously stated, the elevation of the NPN of the blood is of little importance to the well-being of the patient. The increase in blood concentrations of the acid bodies, HPO_4 and SO_4, is another matter, since with retention of these acid ions acidosis results unless compensatory changes occur, for the body will not tolerate any appreciable change in pH of the blood. Normally the kidney is able to excrete more acid than base by two principal mechanisms, a conservation of the latter (base) being necessary since it is not obtainable within the body except from external sources and is of utmost importance in acid base balance. First, by converting Na_2HPO_4 to NaH_2PO_4, a molecule of Na is saved and reabsorbed back into the blood stream. Secondly, by the formation of NH_3 from amino acids with substitution of this radicle for the Na and excretion of the SO_4, HPO_4, and Cl ions with the NH_3, a molecule of Na is again saved. Under normal circumstances, the acid-base balance of the blood is held within compatible limits through the intervention of two organ systems, the kidneys and lungs. The pH of the blood, in turn, is a function of the ratio $\frac{H_2CO_3}{Na\,HCO_3}$. In obstructive nephropathy with retention of acid sulphate and phosphate, a reduction in the denominator of this ratio occurs with a resultant lowering of the pH of the blood and acidosis. A compensatory hyperpnoea occurs in an attempt to adjust $H_2\,CO_3$. Since this mechanism is only about 50 per cent effective, acidosis persists and without adequate renal function or appropriate therapy, it cannot be corrected. As there has been mechanical injury to the tubular epithelium because of increased hydrostatic pressure and resulting vascular changes, we may assume that the base-saving devices described above have been lost and that the HPO_4 and SO_4 are being excreted with free base that is normally conserved by the kidney. When Na is lost, there is always loss of intercellular water and dehydration occurs.

Another important dislocation in blood chemical balance is seen in acidosis. When there is an increase in the serum phosphorous, there is a dissipation of serum calcium since the Ca x P product is generally maintained at 40 mgm. per cent. With acidosis, there is always a decrease in cellular metabolism. Decrease in blood Ca is of greater importance than has been ascribed to it in the past since a normal serum Ca is necessary for the maintenance of the functional integrity of the voluntary and autonomic nervous systems. Low serum Ca is manifested by increased neuromuscular activity, muscular twitching, cardiac irregularities, and convulsions with tetany. Hypocalcemia plays an important role in the convulsions of uremia. To the above conditions may be added anemia and avitaminosis. Poor nutrition, muscular weakness, skin changes and slow healing may be attributed to these states.

Treatment of Uremia Resulting From Obstructive Disease

Adequate treatment of uremia consists of correction of the abnormal blood chemistry in addition to adequate urinary drainage. With adequate urinary drainage, mechanical injury to the tubular epithelium is decreased and normal function encouraged. While this process is taking place, attention must be directed towards correction of the existing acidosis. We believe the administration of Na lactate is an excellent therapeutic measure since it supplies a maximum of base, a minimum of acid, and large quantities of water. The conventional use of NaCl and Ringer's solution in nitrogen retention and uremia is to be strongly condemned, since NaCl supplies nearly equal amounts of acid and base, is not readily excreted even by the normal kidney, and thus overtaxes the already injured kidneys since the Cl must be excreted with either Na or NH_3. Hypochloremia exists in those patients who have had severe vomiting or sweating and is not frequently seen in urological patients. Replacement of the alkaline reserve with Na lactate may be calculated by use of the Hartman-Senn formula—60-CO_2 combining power of patient $\times$ .3 body weight in kilograms = number of cc. of molar Na lactate necessary to bring the patient's CO_2 combining power to normal, or more simply in adults by giving 100 cc. of 1/6 molar (physiological) Na lactate for each volume per cent the CO_2 combining power is below 60. In case large amounts of Na lactate are needed,

the volume may be cut in half by using ⅓ molar solution in place of the isotonic 1/6 molar solution. Correction of the hypocalcemia is made by adding 10 cc. of 10 per cent calcium gluconate to the lactate solution each day. The dehydration is corrected with five per cent glucose as indicated by the cardiovascular condition of the patient. The anemia is corrected with whole blood and the avitaminosis with vitamins B and C parenterally. Definite vitamin B deficiencies indicated by skin and mucous membrane changes were present in most of the acidotic patients and a scurvy level of ascorbic acid was present in some. When renal damage has been severe, daily correction of the blood deficiencies is necessary and of course, if the damage is permanent, the treatment is only palliative, but it is a rare case of obstructive uremia that is on that basis. The following cases serve to illustrate our experience in treating uremic patients.

Illustrative Treatment of Uremic Patients

I. *F. K. 493256:* This patient entered University Hospital with a long history of progressive prostatism leading up to acute retention two days prior to admission. Physical examination revealed a semicomatose, elderly male, nauseated and vomiting with deep respiratory movements and showing severe muscular irritability with positive Shvostek and Trousseau signs. The bladder was greatly distended and the patient severely dehydrated. The prostate was two plus carcinomatous.

Blood chemistry on admission:

NPN .....217 mgm. per cent
CO_2 combining power .....15 volume per cent
Serum Ca .....6.8 mgm. per cent
Hb .....55 per cent

Treatment over a period of 48 hours:

4500 cc. 1/6 molar Na lactate intravenously.
2000 cc. 5 per cent glucose intravenously.
500 cc. blood intravenously.
20 cc. 10 per cent calcium gluconate intravenously.
Catheter drainage.

Blood chemistry after treatment:

NPN .....155 mgm. per cent
CO_2 combining power .....55 volume per cent
Serum Ca .....8.3 mgm. per cent
Hb .....62 per cent

During treatment he became rational, his appetite improved and nausea and vomiting disappeared, excessive neuromuscular irritability diminished. A transurethral resection and a bilateral orchiectomy were performed 14 days later with discharge of ambulatory patient on the 28th hospital day.

II. *E. C. 500576:* This patient was a 36-year-old female with carcinoma of the cervix clinical Grade IV-B. She entered University Hospital in a comatose state. She was severely dehydrated, had deep respiratory movements and was convulsing intermittently.

Blood chemistry on admission:

NPN .....164 mgm. per cent
CO_2 combining power .....14 volume per cent
Serum, calcium .....7.3 mgm. per cent

Treatment over a period of 48 hours:

4500 cc. 1/6 molar Na lactate intravenously.
2000 cc. 5 per cent glucose intravenously.
500 cc. blood intravenously.
20 cc. 10 per cent calcium gluconate intravenously.
Bilateral nephrostomy.

Blood chemistry after treatment:

NPN .....100 mgm. per cent
CO_2 combining power .....59 volumes per cent
Serum Ca .....8.6 mgm. per cent

Patient became rational and convulsions ceased six hours after she had received the Na lactate and calcium gluconate. Her appetite improved and she was discharged on her 28th hospital day. Death occurred six months later due to carcinomatosis.

III. *J. M. 501677:* This patient previously had a left nephrectomy for calculus pyonephrosis. Right pyelonephritis and renal insufficiency developed. The NPN gradually rose to 193 mgm. per cent, the CO_2 combining power dropped to 18 volumes per cent with the usual signs and symptoms of uremia. He was maintained, however, in a comfortable state by daily correction of the acidosis and hypocalcemia over a 21-day period. Forty-eight hours before death, patient's blood showed a NPN of 193 mgm. per cent, a CO_2 combining power of 35 volumes per cent, and a serum Ca of 10 mgm. per cent. He remained symptom free as long as daily correction of the acidosis and hypocalcemia was carried out. Finally, it was impractical to continue treatment and a convulsive death occurred within 48 hours. One hour before death, the NPN was 211 mgm. per cent and the CO_2 combining power, 10 volumes per cent.

IV. *G. K. 140060:* This 67-year-old male entered University Hospital with a five-year history of progressive prostatism associated with intermittent hematuria. Examination revealed a poorly nourished and chronically ill patient in early acidosis. The bladder was palpable to the level of the umbilicus. The prostate was Grade III benign.

Laboratory studies:

NPN .....127 mgm. per cent
CO_2 combining power .....28 volume per cent
Hb .....38 per cent

Upper tract studies were negative and it was obvious that the bleeding was from the prostate. Cys-

tometric examination showed a hypotonic myogenic bladder with a residual urine of 1200 cc.

Treatment over a period of 48 hours:

2000 cc. 1/6 molar Na lactate intravenously.
2000 cc. 5 per glucose intravenously.
1000 cc. blood intravenously.
Catheter drainage.

The patient's nausea and vomiting ceased and his appetite returned. A transurethral resection was then carried out with the removal of 130 gms. of benign tissue and a measured blood loss of 450 cc. This blood loss was replaced and 3000 cc. of five per cent glucose were given postoperatively. On the first postoperative day the NPN was 89 mgm. per cent and the CO_2 combining power 49 volumes per cent. There followed an uneventful convalescence and he was discharged home on the fourteenth postoperative day.

Summary

We believe that the uremic syndrome observed in patients with obstructive nephropathy may be explained adequately upon the objective pathological findings in the blood, namely, the inorganic acidosis, the hypocalcemia, the dehydration, the anemia, the vitamin deficiency. Correction of these abnormalities has caused disappearance of the syndrome in uremic patients even in the presence of continued nitrogen retention as demonstrated by Case III.

Since the NPN of the blood represents only an index of filtration pressure and not necessarily a measure of renal damage, it becomes significant as an index of renal damage only when there is an associated acidosis and hypocalcemia. If the NPN is high and the CO_2 combining power is normal, the patient requires only adequate urinary drainage to release the increased intratubular hydrostatic pressure and to allow simple glomerular filtration at a normal rate and volume. It is not necessary to postpone operative procedures in such patients since there is no significant renal damage if the CO_2 combining power is normal. It has been our practice, therefore, to operate upon obstructed patients in nitrogen retention if the CO_2 combining power is normal, or if abnormal, as soon as the acidosis has been corrected.

A simple rule for correction of acidosis in adults is presented: give 100 cc. of 1/6 molar Na lactate intravenously for each volume per cent the patient's CO_2 combining power is below 60 volumes per cent.

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Khellin in Bronchial Asthma

Ralph H. Major, M.D.*

Kansas City, Kansas

During the past year we have studied the effectiveness of a new drug in the treatment of asthma. This is khellin or khellinin, the active principle extracted from the seeds of the umbelliferous plant, Ammi visnaga, known in Arabic as "Khella," which grows wild in the Mediterranean area and in Arabia. Extracts of its dried seeds have been used since ancient times by the people of these areas as an antispasmodic in renal colic and ureteral spasm.

Several crystalline substances have been isolated from the seeds, including visammix and khellin. Khellin, which is responsible for most of the activity of the plant, was first prepared in an impure form by Mustapha in 1879, purified and separated by Fanth and Salim in 1930. The final determination of the chemical formula of khellin and visammix was made by Malik for khellin and Hassan for visammix in 1932. Samaan, in the same year studied the pharmacological action of khellin and found that it relaxes all the visceral smooth muscles by direct action on the muscle fibers. Davies, in 1948 reported the synthesis of khellin.

In 1945, Anrep and his associates reported some careful physiologic experiments and found that it produced a great increase in the coronary blood flow. In one dog, for instance, the coronary blood flow, which was steady at 27 cc. per minute, increased after 10 mg. to 50 cc. per minute and after a second dose of 10 mg., to 100 cc. per minute. They then treated 38 patients suffering from angina pectoris, reporting 28 good responses, seven moderate, and three with no beneficial effects. The drug was administered both by mouth and intramuscularly.

In 1947, Anrep and his associates reported a series of asthmatic patients treated with khellin, which animal experiments had shown produced a dilatation of the respiratory passages. In 41 out of 45 patients, complete and prolonged relief followed a single intramuscular injection of 200-300 mg. Repeated daily administration of khellin by injection or by mouth conspicuously reduced the number and the severity of the attacks. The authors point out that the action of khellin in bronchial asthma is not so prompt as that of adrenaline or of ephedrine but it is more lasting, and, since it has no effect on the systemic blood pressure, it can be safely administered

*From the Department of Internal Medicine, University of Kansas School of Medicine.

TABLE I

Case No.	*Age*	*Sex*	*Duration of Asthma*	*Hospital Admission*	*Complication*	*Eosinophiles in Per Cent*
1.	45	M.	35 years	9/10/48—9/15/48	Cor pulmonale	9/10/48 4%
2.	52	F.	15 years	3/16/48—3/29/48		3/17/48 19% 3/18/48 18% 3/29/48 14%
3.	30	F.	10 years	2/23/48—3/18/48		2/23/48 4% 2/24/48 5%
4.	23	F.	10 years	8/31/48—9/19/48	Pyelitis	8/31/48 3%
5.	43	F.	6 years	6/25/48—7/23/48	Bronchiectasis	6/26/48 5% 6/29/48 27% 7/1/48 13% 7/6/48 9% 7/14/48 12% 7/19/48 7%
6.	28	F.	3 months	8/12/48—8/25/48		8/13/48 5% 8/18/48 8% 8/24/48 3%
7.	25	F.	12 years	8/18/48—9/7/48		8/18/48 1% 8/20/48 5% 9/2/48 2%
8.	24	F.	18 years	8/21/48—9/1/48		8/21/48 2%
9.	53	M.	6 years	11/10/48—11/24/48		11/10/48 2% 11/12/48 10% 11/13/48 8% 11/22/48 4%
10.	16	M.	13 years	10/24/48—11/7/48		10/24/48 7% 10/26/48 5% 11/3/48 2%
11.	47	F.	28 years	10/25/48—11/13/48		10/25/48 2% 10/29/48 7%
12.	33	F.	8 years	10/4/48—10/9/48		10/4/48 10% 10/8/48 11%

to hypertensive patients. They also state that it relieved attacks of bronchial asthma in some patients resistant to adrenalin or aminophyllin. They consider it safer than aminophyllin and point out that deaths due to aminophyllin have been recorded.

After considerable difficulty we obtained a limited supply of khellin for therapeutic trial. We employed tablets of 20 mg. each and administered them only by mouth. Our standard procedure was to give the patients 10 tablets (200 mg.) twice daily or, in exceptional cases, three times daily.

Because of our limited supply of the drug, we were able to treat only 12 cases of bronchial asthma. All of these patients were severe asthmatics, relieved during attacks only by large doses of adrenalin or aminophyllin, in some instances only by doses which a conservative physician would regard as potentially dangerous. Several patients claimed to receive only fleeting relief or no relief at all from adrenalin or aminophyllin. All of them had found benadryl and pyribenzamine disappointing.

All of these patients with one exception, who could not take the drug, experienced marked relief while in the hospital and taking khellin under our supervision. In most instances the relief was rapid and lasted as long as they continued taking the tablets. A summary of some of the essential data is shown in Table I.

A typical case was summarized in the case summary by the medical resident. "She was treated initially with aminophyllin intravenously, intermittently and continuously; nicotinamide, and required frequent injections of adrenalin. She was also given Amesec capsules (aminophyllin, grains two; ephedrine hydrochloride, grains 3/8; amytal, grains 3/8), all with only slight relief of the asthma. Attacks continued to be severe at night. Treatment was begun with khellin, 20 mg. tablets, 10 tablets twice a day. The patient consistently showed marked relief of asthma in 1-2 hours after khellin was administered orally. She has had no toxic reaction to the drug, and was maintained nicely on 200 mg. bid."

Another summary. "The patient received large doses of benadryl up to 600 mg. daily, aminophyllin suppositories, all to no avail. She was then given pyribenzamine which produced no regression of symptoms. Khellin, 10 tablets, twice daily, produced some improvement. The dose was increased to 25 tablets daily, which resulted in complete regression of symptoms, except for one attack three days after khellin was begun. Three weeks after the institution of khellin medication, the patient was dismissed with no recurrence of the bronchial asthma. She was dismissed with khellin tablets with instructions to take 10 tablets twice daily decreasing the dosage daily by two tablets until none are taken except for an acute attack."

This patient was dismissed from the hospital July 23, 1948. She was seen on October 24, 1948, and stated she had remained free of attacks since leaving the hospital. At this time she brought with her a 16-year-old son, also a sufferer from bronchial asthma. This patient entered the hospital suffering from a mild asthmatic attack.

Now, one swallow, as Aristotle said, doesn't make a spring, and 12 cases do not prove the superiority or even the great value of khellin in bronchial asthma. We are convinced, however, from our admittedly limited experience, that khellin is of value in the treatment of asthma. Unfortunately at the present time it is an expensive drug; however, if it proves of great value, and is produced in greater quantity the cost will undoubtedly come down. We have obtained our supply from the Physicians' Drug and Supply Company of Philadelphia.

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The Use of Penicillin in the Ambulatory Treatment of Syphilis in Pregnancy *

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The fact that syphilis is a rather common disease in the general population in the United States has been repeatedly brought to light by serologic surveys of isolated groups such as are carried out in pre-employment and pre-marital examinations. The incidence of syphilis in females is not accurately known, but its prevalence in young adult males was accurately measured in men examined for military service in the recent war. Thus, figures of the United States Public Health Service[11] show an incidence of 17.4 per 1,000 for white males between the ages of 21 and 35 years, and 253.3 per 1,000 for Negro males of the same age group. Although no direct inference regarding incidence in the female can be drawn from these figures, it seems logical to assume that the figures would not be significantly lower in females of the same age group, and the potential occurrence of syphilis in pregnancy is suggested. Among 809 cases admitted to the Obstetric Service of the University of Kansas Medical Center's Out-Patient Department during the year 1947, 39 cases of syphilis in pregnancy were encountered. This is an incidence of 4.8 per cent, or 48 per 1,000.

The management of syphilis complicating pregnancy actually involves two problems: (1) treatment of the mother's syphilis, which is of secondary importance to (2) prevention of or treatment of congenital syphilis in the unborn child. This situation offers practically the perfect therapeutic problem which can be dealt with prophylactically and preventively, anticipating successful results.

It is generally accepted that the spirochete does not invade fetal tissues until about the fifth month of pregnancy, and Dippel[1], in a study of the internal organs of fetuses aborted by syphilitic mothers, found no spirochetes in the fetal viscera prior to the 18th week of gestation. As might be anticipated, the intrauterine transmission of syphilis is greatest when the infection has been recently acquired, and diminishes throughout successive pregnancies. Treatment of syphilis in the pregnant female during the first half of pregnancy can be said to be truly prophylactic in nature so far as the fetus is concerned, since eradication of viable spirochetes from the mother's blood and tissues at this stage of pregnancy will actually prevent infection of the fetus. Treatment carried out in the last half of pregnancy should be considered active treatment of an early infection in the unborn baby as well as treatment of the mother's disease.

The observations of Boas and Gammeltoft[2] in 1928 remain classic proof of the necessity for adequate treatment in the pregnant syphilitic mother as a means of preventing fetal mortality and congenital syphilis. Studying a group of 201 syphilitic mothers receiving no treatment during pregnancy, they reported 3.5 per cent of their children healthy while 96.5 per cent were syphilitic. Even minimal amounts of relatively ineffective therapeutic agents administered during pregnancy materially increased the proportion of live, healthy infants, and of 105 mothers receiving arsphenamine during or both before and during pregnancy, 15 to 20 per cent of the children were syphilitic and 80 to 85 per cent of the children were normal. These observations have been repeated numerous times, for instance by such an outstanding man as McCord[3], and have led to the important conception that treatment during pregnancy, even with inferior chemotherapeutic agents, is a powerful weapon in the prevention of prenatal and congenital syphilis.

The ideal anti-syphilitic agent should combine the attributes of ease and simplicity of administration with the more important qualities of a high degree of effectiveness as a spirillicide and a low index of toxicity for the host. In treatment of the disease in pregnancy, the therapeutic agent must also be capable of penetrating the placenta readily. Penicillin administration more nearly approaches these criteria than any other method of treatment now available. Its effectiveness as a spirillicide is borne out by numerous reports of incidents of re-infection in penicillin-treated syphilis. Its toxicity is minimal, and administration is not technically difficult nor prolonged. It has been shown to pass through the placenta and pervade fetal blood, tissues, and amniotic fluid as early in pregnancy as 10 weeks. A single intramuscular injection of 100,000 units in the mother is capable of producing adequate bacteriostatic levels in the fetus.[4, 5, 6, 7]

During the past four years, several groups of observers have reported their experiences with penicillin in the treatment of the syphilitic pregnant woman, and have indicated their belief in the superiority of this agent over previous chemothera-

* A cooperative study by the Departments of Internal Medicine, Obstetrics, and Pediatrics, University of Kansas School of Medicine.

peutic agents used for the prevention of prenatal syphilis. Ingraham[8] has recently summarized the results of various types of penicillin treatment of the pregnant woman from the published reports of the several groups. His excellent discussion of the entire subject is complete, and his recommendations for maternal and infant follow-up are specific. He concludes, "Satisfactory dosage of penicillin to prevent congenital syphilis would seem to consist of a total of 2.4 million units or more given over a period of seven or more days."

The previous report of Ingraham et al[9] constitutes the only published report of treatment of syphilis in pregnancy using oil-wax mixtures of penicillin. They report a group of 62 patients so treated with 84 per cent normal infants resulting when a total dosage of 4.8 million units was used.

Methods and Material

At the University of Kansas Medical Center during the two year period from December, 1946, to December, 1948, 125 cases of syphilis in pregnancy were treated in the Out-Patient Department. Treatment was carried out on an ambulatory basis, using Romansky formula penicillin-oil beeswax mixtures.* The original schedule of 3.0 million Oxford units in 12 daily intramuscular injections was later increased to 6.0 million units in 12 daily doses. Six intravenous injections of Mapharsen and four intramuscular injections of bismuth were given concomitantly with the penicillin in a few of the earlier cases. Since June 1, 1947, all cases have received 6.0 million units of penicillin without other therapy. Treatment was begun in each case on Monday with 600,000 units and continued at this level daily through Saturday. Treatment was omitted on Sunday and resumed on the following Monday with 400,000 units daily through Saturday. Thus, 6.0 million Oxford units were administered in 12 doses over a total period of 13 days.

Of the 125 cases treated, 12 of the mothers were sero-negative at the beginning of treatment and were considered as "cured" cases of syphilis. All 12 cases delivered normal infants. They are not included in this study. Sixty-three cases were followed through pregnancy and delivered in the Obstetrical Department of the Medical Center. Forty-seven of the 63 infants have been followed sufficiently to allow statements regarding the presence or absence of congenital syphilis.

Pre-treatment surveys of each patient included an estimate from the history or from previous knowledge of the patient as to the probable duration of the infection in the mother, a complete physical examination, and fluoroscopic and radiographic examination of the heart, chest, and aorta. Unless spinal fluid examination had been carried out recently, this was done in cases encountered in the first trimester of pregnancy. Quantitative serologic tests for syphilis (STS) were done in each case prior to treatment and each month thereafter until delivery. Titrated Kolmer and Kahn tests were carried out in each instance and were reported in terms of the greatest dilution of serum which produced at least a two plus reaction. Thus, a two plus reaction in a dilution of 1:64 was reported as 64 units. All tests were done in the serology laboratory of the University of Kansas Medical Center. Monthly physical inspections for evidence of mucocutaneous relapse or re-infection were carried out. Substantial increase in serologic titre (serologic relapse) or evidence of clinical relapse of the syphilis is considered indication for re-treatment. One case was re-treated on the basis of an apparent serologic relapse, although subsequent STS indicated that perhaps this re-treatment would not have been necessary. At delivery, quantitative STS were done on mother's blood and on umbilical cord blood. In many instances quantitative STS were done on the infant's blood during the latter part of the period of hospitalization (5-10 days). An attempt was made to get quantitative STS on the infant's blood at periods of three weeks, six weeks, three months, and six months after birth, although these observations are partially incomplete in some cases. Follow-up observations on the mother were carried out as in any other case of syphilis and are not included in this report.

Results

As shown in Table I, there was no instance of abortion, miscarriage, or neonatal death in the group of 63 mothers followed to delivery. The one still-birth resulted from placenta praevia, and pathologic examination of the fetus and placenta failed to show evidence of syphilis. Sixty-three living infants were delivered, including one set of twins.

TABLE I
RESULTS OF PENICILLIN TREATMENT OF 63 PREGNANT WOMEN

PENICILLIN DOSAGE		NUMBER OF PATIENTS	RACE		STAGE of DISEASE in MOTHER					UNSATISFACTORY OUTCOME of PREVIOUS PREGNANCIES	WEEK of PREGNANCY TREATMENT BEGUN				UNSATISFACTORY OUTCOME of PREGNANCY				DELIVERED	
			WHITE	COLORED	CONGENITAL	SECONDARY	EARLY LATENT	LATE LATENT	C.N.S. or CARDIOVASCULAR		1 to 15	16 to 23	24 to 31	32 to 40	ABORTION	MISCARRIAGE	STILL BIRTH	NEO-NATAL DEATH	LIVING INFANTS	LIVING INFANTS SYPHILITIC
3.0 MILLION	No.	16	1	15	0	0	10	4	2	16	4	4	3	5	0	0	0	0	17*	1
UNITS	%	100	6.3	93.7	0	0	62.5	25	12.5	37.5	25	25	18	32	0	0	0	0	100	6.2
6.0 MILLION	No.	47	1	46	5	2	23	17	0	12	10	12	12	13	0	0	1	0	46	1
UNITS	%	100	6.4	93.6	10.7	4.2	48.9	36.2	0	25.5	21.2	25.5	25.5	27.7	0	0	2.1	0	98	2.1

* Includes one set of twins

Only two obviously syphilitic infants were born in the entire group of 63 mothers. The mother of one of these made her initial visit to the pre-natal clinic four weeks prior to delivery and was found to have

*The penicillin used in this study was supplied by the Kansas State Health Department, Division of Venereal Disease Control.

secondary syphilis. Treatment was carried out as usual with 6.0 million units and she delivered two weeks after completion of the treatment. The baby showed exfoliative skin lesions and x-ray evidence of syphilitic periostitis. The second mother who had latent syphilis was under treatment and had received 4.4 million units of penicillin when labor began at term. Again the infant showed evidence of syphilis in skin and long bones. Both babies received treatment with penicillin in the neo-natal period so that there was no opportunity of observing the long term effect of the pre-natal treatment.

TABLE II

DATA FROM FOLLOW-UP STUDIES OF INFANTS

PENICILLIN DOSAGE		NUMBER of INFANTS	MOTHERS STS at DELIVERY		CORD STS		DURATION to SUSTAINED SERONEGATIVITY in INFANT						LIVING SYPHILITIC INFANTS	CLINICALLY NORMAL INFANTS		AVERAGE DURATION of FOLLOW-UP in DAYS
			POSITIVE	NEGATIVE	POSITIVE	NEGATIVE	7 DAYS	3 WEEKS	6 WEEKS	3 MONTHS	6 MONTHS	OVER 6 MONTHS		SUSTAINED SERO-NEGATIVE	SERO-POSITIVE with FALLING TITRE	
3.0 MILLION UNITS	No.	13*	12	1	8	5	5	1	1	3	0	1	1	11	1	354
	%	100	92	8	62	38	38	7.7	7.7	23	0	7.7	7.7	84.6	7.7	
6.0 MILLION UNITS	No.	34	29	5	29	5	7	3	14	3	0	1	1	28	5	192
	%	100	85	15	85	15	21	8.5	41	85	0	3	3	82	15	

*From 12 pregnancies - includes one set of twins

It has been emphasized by Ingraham and others that seronegativity of the mother at delivery is not a pre-requisite to obtaining a normal infant, and that the great majority of mothers will be sero-positive at term. Our experience is in accord with this view, 87 per cent of the mothers showing positive STS at delivery.

Positive serologic tests of umbilical cord blood obtained at delivery offer no prognostic value. This applies, of course, only to cases receiving treatment during pregnancy. The reagin responsible for positive serologic tests on blood from the umbilical cord is a composite of transferred reagin from the mother and that produced by the fetus. The former disappears rapidly from the infant's blood after birth. An increase in titre of the infant's STS should be taken as evidence of active infection in the infant.

Post-natal follow-up of 47 infants is summarized in Table II and it will be noted that 37 infants had positive STS on umbilical cord blood at delivery. At the end of six weeks 31 cases were sero-negative and at the end of six months 39 of the 47 cases were seronegative and remained so throughout the observation period. Two infants reached sustained seronegativity after six months of life. None of these infants had received anti-syphilitic treatment in the interim. Six cases showed no clinical evidence of syphilis when last seen and radiographic studies of long bones were negative. Their STS were still positive in low titre but were showing a progressive loss of titre in all instances and it is quite probable that these cases will continue to seronegativity without further treatment.

Comment

Schedules using oil-wax mixtures or other slowly absorbable penicillin preparations in the treatment of syphilis in pregnancy have not been considered acceptable by the Venereal Disease Division of the U. S. Public Health Service[10]. At the University of Kansas Medical Center the majority of pregnant syphilitic women encountered are economically unable to afford hospitalization for treatment with aqueous penicillin solutions. Some form of ambulatory treatment became highly desirable in these cases, and if effective might be desirable in all cases. The present study, although small, would seem to indicate that results can be obtained with oil wax mixtures which will compare favorably with the published results of others using aqueous solutions. Results in this group of patients are superior to those reported by the University of Pennsylvania group[12] where a total dose of 4.8 million units of penicillin-oil-wax mixtures was used. This difference is perhaps more a result of the higher incidence of early symptomatic cases treated late in pregnancy by the Pennsylvania group than because of the higher total dosage in use at the University of Kansas Medical Center. Ingraham suggests that 2.4 million units of aqueous penicillin in seven days is adequate to prevent congenital syphilis. We have noted no significant difference in results with 3.0 or 6.0 million units total dosage although the number of patients is too small to permit any conclusions on this point.

Summary

1. One hundred twenty-five cases of syphilis in pregnancy were treated at the University of Kansas Medical Center with oil-wax mixtures of penicillin. All patients were treated on an ambulatory basis in the Out-Patient Department.

2. Sixty-three cases were followed to delivery. There were no abortions, miscarriages, or neonatal deaths. One still-birth resulted from placenta praevia and was not syphilitic. Two living syphilitic infants and 61 normal infants were delivered. Normal infants resulted in 96 per cent of cases.

3. Forty-seven infants were followed for an average of 138 days after delivery. None has shown evidence of relapse.

4. Where prenatal treatment has been adequate, maternal and umbilical cord blood need not be seronegative at the time of delivery in order to obtain a normal, non-syphilitic infant.

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Complete program in April issue of the Journal

The Therapy of Burns

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A burn is a real surgical emergency. The life of a patient severely burned is immediately threatened and is in constant jeopardy until the burned areas are covered, either by the spontaneous regeneration of epithelium or by skin grafting. All therapy is directed, first, toward maintaining the circulating blood volume and, second, toward promoting prompt healing with a minimum loss of function. Death can occur at any time during any of the four clinical phases, namely, shock, toxemia, sepsis, and contracture.

Maintenance of the Circulating Blood Volume and Related Problems

The immediate problem consists of the prevention and treatment of shock. In order to bolster the blood volume, which falls very rapidly, replacement of the lost elements is begun at once. Plasma, water, and electolytes leave the blood stream through damaged capillary walls and accumulate in volume in the burned areas. A rational plan of treatment is needed. The many formulae that have been devised empirically or based upon laboratory findings are disappointing. If strictly adhered to, each formula has its faults. The clinician's estimate of the patient is still the best guide, but one must start with some basic plan.

The percentage of the skin surface burned can be utilized to determine the amount of plasma and electrolytic fluid to be given. The table of Lund and Browder[9] (Table 1) is useful. This estimation of the extent of skin surface is based on Berkow's[2] original work. One should overcome the temptation to overestimate the extent of the burn. The National Research Council in 1942 recommended that the formula of Harkins[8] be followed, namely that 100 cc. of plasma with an equal amount of normal saline be given in the first 24 hours for each per cent of the skin surface burned. We have followed of late the plan of Cope and Moore[4] that 75 cc. of plasma and an equal amount of electrolytic solution be administered the first day. One-half the total calculated replacement is given in the first eight hours and the remaining half during the following 16 hours. The clinical response of the patient, however, is always more important.

Some whole blood is advantageous from the beginning because, as has been shown by Moore and associates[11], blood has been lost from initial hemolysis at the time of the burn. Further, anemia is evident within a few days and becomes more important later due to repeated blood loss from frequent changes of dressings and from the effects of nutritional deficiency and bone marrow depression. Moyer, Coller, Vaughn, and Marty[12] used whole blood exclusive of plasma; Evans and Biggers[5] advocated 500 to 1000 cc. of blood every six hours for the first day. We have felt that this approach exceeds the needs of the situation and is not practical. For some of the reasons given above, we routinely give some blood early, usually employing as blood volume replacement two parts of plasma to one part of blood. A severe burn of 50 per cent of the body surface would receive ordinarily from 3500 cc. to 5000 cc. of blood and plasma replacement of which approximately 3000 cc. would be plasma and 1500 cc. would be whole blood given within the first 24 hours. Depending upon the response of the patient, one-third to one-half these amounts might be needed the following day.

Oral administration of salt solution is preferable to the intravenous route. Large quantities can and will be ingested readily unless the patient is vomit-

NEW TABLE OF SURFACE PROPORTIONS IN DETAIL

LUND AND BROWDER

AGE	BIRTH	1	5	10	15	ADULT
AREA						
Head	19	17	13	11	9	7
Neck	2	2	2	2	2	2
Anterior Trunk*	13	13	13	13	13	13
Posterior Trunk**	13	13	13	13	13	13
Buttocks	5	5	5	5	5	5
Genitalia	1	1	1	1	1	1
Upper Arms	8	8	8	8	8	8
Forearms	6	6	6	6	6	6
Hands	5	5	5	5	5	5
Thighs	11	13	16	17	18	19
Legs	10	10	11	12	13	14
Feet	7	7	7	7	7	7
TOTAL	100	100	100	100	100	100

*Without neck or genitalia
**Without neck or buttocks

The numbers given are the percentage of the entire skin surface for each anatomical part.

*From The Department of Plastic Surgery, University of Kansas Medical Center.

ing when the parenteral route must be used. A flavored mixture of one-third part of soda bicarbonate and two-thirds parts salt or sodium lactate made up in isotonic solution is useful. The mildly alkaline solution will help combat the tendency toward acidosis usually found early as can be shown by a lowered CO_2 combining power. In spite of the early reports of Underhill[14] and the later work of Fox[6], rapid and large unbalanced salt solution infusions are probably harmful. The rapid diffusion into the burned area of more sodium will draw more water and promote more edema at the expense of intravascular and perhaps intracellular fluid.

In addition to the above stated fluid requirements, the daily insensible water loss, 1500 cc. for an adult, must be replaced, if not by mouth, by the administration intravenously of five per cent glucose in water. The too rapidly given infusion of plasma can embarrass the heart and cause pulmonary edema, but usually plasma is given too slowly to maintain the falling circulating fluid volume.

Details and Guides of Management

The urinary output is a convenient measure of the adequacy of treatment. We employ an indwelling catheter which makes possible an accurate check. An output of 50 to 200 cc. per hour indicates adequate fluid therapy and, conversely, an output of from five to 30 cc. per hour for three or more hours calls for more fluids, usually plasma. A persistently low output with continued treatment means either inadequate fluid therapy or impending renal failure.

A water tolerance test[4] has been suggested for differentiating these two causes of oliguria. Water containing five per cent glucose, 1000 to 1500 cc. in amount, is given rapidly by vein. This amount of infusion has not been found to be deleterious. The output is measured over the time of one hour. A clear-cut increase in urine indicates that the kidney is able to function but that the fluid demands are not being met. No increase in output is evidence that caution should be exercised in the face of impending urinary shutdown. The younger patient usually has considerable renal reserve but older patients may not have adequately functioning kidneys to meet the demands. We have seen outputs of 7000 cc. of urine by young patients who have received perhaps over-enthusiastic treatment. Present thinking on the therapy of anuria postulates that the damaged kidney be allowed to rest as much as possible, no effort being made to allow the usual intake of from 1000 cc. to 1500 cc. for the removal of urinary wastes. The insensible loss should be replaced plus only a volume per volume amount of fluid equal to the amount of scanty urine excreted in the preceding 24 hours.

Wound edema in the burned area occurs rapidly and reaches its height after the receipt of the burn at about 48 hours. Resorption of this translocated fluid from the extracellular tissue spaces begins at that time. Further fluid therapy of such large volume is no longer necessary. The needs then are for only the replacement of the insensible loss and for adequate urinary output. A total intake of 3000 cc. to 4000 cc. of fluid is adequate.

Laboratory studies are helpful early and late but should not be leaned upon as the sole guide for therapy. Single or repeated reports on the various chemical constituents of the blood and urine give only a part of the whole picture which is not yet understood. Most useful early are repeated blood counts, hemoglobin determinations, and hematocrit readings, all of which will show the presence of hemoconcentration indicating the need of increasing the blood volume. Blood counts are indicated every two or three days at a later stage as a guide for the correction of anemia. Plasma proteins, plasma chlorides, N.P.N., and CO_2 combining power determinations are of some value but are not such important guides for treatment. Urinalyses give some indication of fluid requirements and renal damage.

Nutritional Requirements

Proper dietary management is a very important phase of the care of the burned patient. The diet should be of high protein and carbohydrate content with an average caloric value of 3000 C. for adults. Such a diet, as Abbott and associates[1] point out, is poorly tolerated initially but can be enforced by concentrated tube feedings and by between meals supplementation using protein hydrolysate in eggnogs and milk. Protein is given in dosage of from two to four times the normal dietary requirements, and carbohydrate in large amounts is used to spare the ingested protein, making it available for healing and repair.

Vitamins in large dosage are added to the diet or administered separately. Several times the daily requirements can be given in one of the poly-vitamin proprietary preparations. We often employ the pure vitamins separately in order to obtain the large daily dosages recommended by Lund[10]. Ascorbic acid one to two gm., thiamine and riboflavin 10 to 20 mg., nicotinic acid 150 to 250 mg., and sometimes relatively smaller doses of vitamins A and D are recommended.

Local Treatment

Countless local medicaments have been applied to burns. The ointment used makes no fundamental difference providing the substance does no harm and is kind to the tissues. Any of the tanning agents are mentioned only to be condemned. Strict adherence to the basic fundamentals of surgery is what is im-

portant. A plan should be employed that avoids further contamination, converts a dirty wound into a clean one, keeps the wound clean, and keeps it at rest for a sufficient time to allow healing. The depth of skin lost can be accurately ascertained usually for the first time at the first dressing which is left undisturbed for two weeks after application. The plan is then to remove all the slough, to get the wound clean as quickly as possible, and to cover the open granulations by skin grafts.

In order to consolidate discussion, an outline of treatment which we feel follows these basic precepts is listed:

1. *General Appraisal*—The surgeon in charge, after his examination, decides whether the patient can stand an immediate clean up. A large bore needle is inserted in a suitable vein (cut down on if necessary) and blood samples are withdrawn, principally for blood count, hematocrit, and blood typing. Plasma is started as the syringe is removed from the needle. A blood pressure cuff is applied if there is an unburned arm available.

2. *Aseptic Precautions*—All personnel are masked and sterile gloves are put on while an assistant cuts away the clothes and places the patient on a sterile sheet.

3. *Analgesia*—Morphine sulfate in moderate dosage, gr. 1/6 to ¼ for adults, is administered intravenously to act quickly and to shorten prolonged depressant effects. Light ether anaesthesia may be given to manage children if the tracheobronchial tree is unaffected by the burn.

4. *Cleansing Debridement*—When the patient is in suitable condition, the burned areas are washed rapidly but gently with white soap and sterile water. Detritus and loose skin are removed. Large blebs are unroofed but smaller blisters are left intact. No vigorous scrubbing is done and the cleansed areas are lavaged with sterile normal saline.

5. *Definitive Dressing*—Gloves are changed. A single layer of fine meshed grease gauze (number 44 gauze bandage impregnated with vaseline) is laid smoothly over the burned surface. One or two layers of standard surgical gauze flats (four by four inches) are next applied. A voluminous layer of sterile mechanic's waste or cotton is bound on tightly by coarse roller bandages. Elastic bandages may be employed but they can be applied too tightly with little effort. It is our concept that splinting a burned area is as important as splinting a fracture. Blair[3] advocates pressure dressings for the following sound reasons: (a) elimination of dead space, (b) limitation of venous and lymphatic stasis, and (c) splintage for rest and healing.

6. *Position of Function*—Extremities should be fixed by the dressing so that each joint is in its position of optimum function should fixation of the joint follow. These positions briefly are: fingers in semiflexion with thumb in opposition, wrist dorsiflexed, elbow at right angles, shoulder in slight abduction, flexion, and internal rotation, ankle at right angles, knee flexed ten degrees, and hip slightly abducted, flexed, and externally rotated.

7. *Tetanus Prophylaxis*—After negative skin testing, 1500 to 3000 U. of T. A. T. is given or, if previously actively immunized, (within one year) one cc. of toxoid should be administered.

8. *Chemotherapy*—Penicillin is started at once in adequate dosage to prevent infection. We prefer the crystalline product given every three hours to the long acting agent in an oil base. Sulfa drugs are not given routinely because of the unknown status of renal function and the dangers of crystalluria.

9. *Oxygen*—Oxygen is started at once if there is suspicion that the tracheobronchial tree has suffered damage. It also may be some benefit to a shocked patient.

The local treatment of a burn is done rapidly. Sterilized emergency packs should be made up beforehand and ready for immediate use. Vaseline gauze is more readily applied on impregnated bandage rolls. Cotton or mechanic's waste can be sterilized in bulk. Coarse surgical gauze, four inches wide and rolled in lengths of about five yards, is a useful outer bandage.

The First Dressing

An issue is made of the initial dressing which is left untouched for from 12 to 14 days after the primary dressing is applied. Pressures will be exerted by nurses, the family, the patient, and fellow patients to remove the foul smelling dressings. The reason for the doctor's insistence on not changing the dressing earlier is that the wound will be healed at the end of this time if the burn is of first or second degree. Third degree burns will finally be obvious by the gray, brown, or black eschar. Everyone of experience knows how impossible it is to tell the difference at the onset between a second or third degree burn unless the tissues are charred. This routine, of course, must be varied if a late spiking or sustained temperature indicates infection which could be inflicting severe damage on the delicate regenerating epithelium. In general, unless absolutely indicated, bandages are not removed for about two weeks because this new epithelium may be destroyed in so doing.

Late Care of the Third Degree Burn

The problem of the third degree burn is to prepare a suitable bed of granulation tissue as soon as possible for skin grafting. Surgical debridement is

the quickest method of removal of the necrotic adherent skin. Early excision in the operating room under anesthesia may save several days that would be spent in waiting for the slough to separate with daily changes of wet dressings. The acid debridement of burns does save some time but is disappointing because the pyruvic acid in corn starch paste is messy to prepare daily and is painful to apply. Saline tub baths are useful to remove adherent dressings, especially in children, but are not without danger.

Preparation of Granulation Tissue

The wound is ready for skin grafting when the following requirements are met. The granulations should be firm and relatively dry, bleed easily on touch, cherry red in color, flush with the surrounding skin edge, and relatively free of suppurative exudate. A thin white or pink line of regenerating epithelium around the wound periphery is fair insurance that the graft will take. Wound cultures are of some value. Hemolytic staphylococci or streptococci will often destroy the graft. Gram negative contaminants do not necessarily interfere with a good take of the graft[7]. Should the dressings be discolored with blue or green pus as evidence of infection due to B. pyocyaneous (P. aeroginosa), furacin soluble[13] impregnated in the fine meshed gauze or the employment of a wetting solution of ¼ per cent parachlorphenol will clean up the infection.

A plan for producing proper granulations in preparation for grafting is recommended:

1. Daily or twice daily changes of wet dressings which are started immediately after the first dressing. This is aseptically carried out, using masks and gloves.

2. Wound culture is made for predominant organisms.

3. Fine meshed gauze is laid next to the wound, followed by a layer or two of coarse gauze, then absorbent cotton in a sheet bound by a coarse roller of gauze. Furacin is often impregnated in the fine gauze.

4. Pressure is employed in the application of the bandage.

5. Dressings are saturated with saline and kept moist by wetting every three hours. An outer layer of oiled silk or rubber sheeting helps retain the moisture. Wet dressings are important to give free surgical drainage. Other solutions such as penicillin, tyrothricin, boric acid, parachlorphenol, one per cent acetic acid, or furacin in solution may be employed to advantage depending upon the bacteriologic flora of the wound.

Only a few days of the wet dressing procedure are usually necessary to produce a wound that will receive a skin graft of a high percentage of take. The technique of skin grafting is beyond the scope or purpose of this discussion.

It is hoped that the day will come when no longer will be seen patients whose general debility, marked wasting, grotesque contracture, foul purulent wounds, and abject terror of being treated, show the incontrovertible evidence of neglect, ignorance, and procrastination.

Summary

1. Blood, plasma and salt solutions are administered in the indicated amounts to prevent shock and maintain the falling circulatory volume.

2. The treatment of anuria is discussed. A water tolerance test for differentiating the causes of oliguria is reviewed.

3. A detailed plan of initial local treatment is presented that converts a burn into a clean wound, prevents additional contamination, and keeps it at rest until healing has taken place.

4. A high carbohydrate, high protein diet supplemented by vitamins is recommended.

5. The initial burn dressing as a rule is left intact from 10 to 14 days.

6. The elimination of the necrotic slough of a third degree burn can be done quicker by surgical debridement.

7. The preparation of granulations, of a third degree burn, suitable for grafting can best be done by daily wet pressure dressing.

8. Skin grafting of full thickness burns is done as rapidly as possible in order to minimize anemia, dehydration, contractures and nutritional debility.

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CHILD WELFARE PAGE

Measles (Rubeola)—Prevention and Modification

Gamma globulin (immune serum globulin) is that fraction of human serum which contains the circulating antibodies. For measles it has largely supplanted the two most effective substances available in the past—immune placenta globulin and convalescent serum. The physician should keep in mind the following points concerning it:

1. *For Red Measles Only.*

It is particularly effective in modifying or preventing attacks of red measles (rubeola). It has not proved effective against any other disease except perhaps infectious jaundice.

2. *Method of Administration.*

The globulin is injected intramuscularly, preferably in the buttocks. For this a 20- or 21-gauge needle is most satisfactory. Pull back on the plunger of the syringe before injection to be sure the needle is not in a vein since globulin, as now prepared, must not be used intravenously. *Caution:* the globulin is a concentrated protein solution, hence, viscous and sticky. Do not fill syringe until prepared to make the injection; otherwise, syringe may become frozen.

3. *Time of Administration.*

To be effective, immune globulin should not be given later than the seventh day after exposure.

4. *Safety.*

A great many intramuscular injections have been given without severe reaction and with very little local pain in the dosage recommended.

5. *Prevention*

a. Indications:

Desirable in some cases such as extremely young infants, debilitated patients, and non-immune pregnant women.

b. Dosage and time:

.08 to .1 cc. per pound of body weight given as soon after exposure as possible.

c. Duration of immunity:

The globulin confers a passive immunity of 3 or 4 weeks duration only.

6. *For Modification.*

a. Indications:

In older children it is desirable to allow the patient to have a mild form of the disease. Modified measles may vary from a disease only slightly milder than the average case to one which exhibits one or two stigmata of measles.

b. Dosage and time:

.02 to .025 cc. per pound given on or about the fifth day after exposure.

c. Duration of immunity:

Permanent active immunity provided the disease has been modified and not prevented. In the modification of measles the physician must steer between complete suppression and no modification at all.

7. *Not for Treatment.*

Gamma globulin is ineffective in the treatment of measles.

Prepared by Committee on Child Welfare

CANCER PAGE

Cancer of the Larynx

Cancer of the larynx is responsible for about one per cent of deaths due to cancer and occurs most frequently in the fifth and sixth decades of life—rarely under 40.

Cancer of the larynx is present ten times more frequently in the male than in the female.

Intrinsic lesions account for 70 per cent of these cancers and extrinsic lesions account for 30 per cent.

Hoarseness of many weeks duration is the principal symptom of the intrinsic lesion.

Fullness in the throat, excess mucus and dysphagia are the principal symptoms of extrinsic tumors.

Metastasis is late in intrinsic lesions but early in extrinsic lesions.

Diagnosis is only positive by biopsy, but history, indirect mirror examination, and roentgenological study must be used to determine the extent of the lesion.

Treatment of the lesion is by the surgical approaches of laryngofissure and laryngectomy or by irradiation.

Finally, 85 per cent of intrinsic cancers of the larynx and 60 per cent of the extrinsic cancers of the larynx can be cured if treated early.

Prepared by Committee on Control of Cancer

PRESIDENT'S PAGE

Dear Doctor:

Thanks again for the assistance you gave to the Rural Health Program. The success of this effort is an example of a good blend of politics and public relations. The people of Kansas expressed their wishes. The legislature delivered, and on February 18 the Governor christened the new program with his signature.

Kansas Medical Society Day, March 7, at the Medical Center was quite a success and probably will become an annual observance. This movement will play a part in attracting Kansas graduates to Kansas locations.

Organizational activities were outlined to all the junior and senior medical students. Dr. Haddon Peck discussed activities of the Society with the Farm Bureaus of Kansas and how doctors could fit into programs of the state Society. Dr. Conrad Barnes of Seneca presented facts about Blue Cross and Blue Shield programs and explained his views on rural practice. Victor Hildyard, a young doctor from Baldwin, told why he chose to practice in a small community and elaborated on his advantages there.

Mr. Clyde Coffman, a citizen of Overbrook, outlined many of the things a small community in Kansas could offer a doctor of medicine. He was ably supported by Mr. Clarence Rupp and Mr. Hal Harlan, other representatives from the Farm Bureau.

The ethics of medicine by Dr. Fred McEwen was a masterly address. Dr. Roy Croson inspired a great deal of interest in his explanation of plans for a Student Union Building on the medical school campus.

Medico-legal, narcotic and tax problems were explained by Mr. Kirke W. Dale. Medico-political relationships were discussed by Mr. Clarence Munns. Dr. J. F. Hassig and Mr. Blake Williamson outlined procedures of the Board of Medical Registration and Examination. Dr. Franklin D. Murphy summed up the medico-social possibilities.

All in all it was a very inspiring day and such efforts should go a long way toward getting Kansas staffed with well qualified physicians.

I assume that you are watching the papers and current magazines with interest concerning the activities of the A.M.A. in the field of public education. There will be an increasing amount of evidence presented through different media to give the people facts about the advantages of the free practice of medicine in contrast to free medicine.

The contribution you make to the A.M.A. will go a long way in the promotion of a constructive program of education and better public relations. The proponents of compulsory health insurance programs are keenly interested in how well the doctors support this program launched by the American Medical Association. You can scarcely afford to be an "anti" now, else they will use your attitude for their capital gain. The people will wonder why you object to giving them your side of the story.

At this season of the year I know your interests are rather widespread, but I hope you won't forget to pass along my appreciation to members of our Auxiliary and our medical assistants whenever you can, for the splendid work they have been doing.

Please watch for communications from the central office on matters of importance and announcements concerning the 90th annual session, and do not put off too long a request for hotel reservations for that meeting.

Sincerely,

O. B. Davidson M.D.

President.

EDITORIAL COMMENT

A Tribute to Franklin D. Murphy, M.D.

In this issue, largely devoted to contributions from the faculty of the School of Medicine of the University of Kansas, it seems appropriate to pay tribute to Dean Franklin D. Murphy. Since his appointment to this position in July 1948, he has accomplished an unbelievable number of tasks. He has won the confidence of the medical profession and has begun a far-reaching program of public service.

In the span of a few months Dr. Murphy and other Kansas physicians developed the Kansas Plan, which has achieved not only national recognition in the lay press but has brought about the active cooperation of the Kansas Farm Bureau and the Kansas Medical Society. It has furthermore obtained a grant of some four million dollars for expansion of the School of Medicine.

It is noteworthy that Dr. Murphy's interests are not confined to the school. As a member of the Kansas Medical Society he has given his assistance to each project this organization pursues. He has spoken before most of the component medical societies. He has attended many committee meetings. He has co-operated in a real and personal way upon every occasion when his services were requested.

Dr. Murphy was appointed chairman of the Governor's Advisory Committee on Mental Institutions and has been a large influence in an effort now nearing success toward improving the mental hospitals in this state. He has spoken before national and regional meetings of the American Medical Association and before medical Auxiliaries and innumerable lay groups.

It is Dr. Murphy's philosophy that the University of Kansas School of Medicine must serve the people of this state. The school and the Kansas Medical Society have united their efforts toward the end that the entire medical profession may give the people of Kansas the finest medical care in the world.

The Kansas Medical Society is proud of the work that Dr. Murphy has accomplished and is happy to include the Medical School in its public service projects. The Journal, speaking for the Society, wishes him many years of continuing success on ever widening planes, and pledges its support to Dr. Murphy, his Board of Regents and his faculty in the interest of the people of Kansas.

Student Union Building

A Student Union Building on the campus of the University of Kansas School of Medicine is one of the greatly needed additions to the school which will not be provided in the Rural Health Bill. The Kansas Medical Society, recognizing the value of this building both to the students and to those members of the profession who visit the school for graduate education, is planning to assist in the fund raising for this project. Detailed announcements will be given in the near future when the campaign begins, but until those details are available the Journal wishes to advise the profession that planning is under way.

Dr. F. R. Croson of Clay Center has been appointed by the president with the approval of the Council as chairman of this project. He is currently gathering information and organizing the work that will be done in obtaining the necessary donations from the membership of the Kansas Medical Society. Dr. Croson will make a detailed announcement to the membership in the near future. For the present, however, it is known that $65,874.47 is already available through pledges and donations made for the Francisco Memorial and the Student Union Building. It will take considerably more than this amount before the structure may be completed, and it is that money that the Kansas Medical Society proposes to raise.

Several factors combined to make the project advisable for the Society. One is the fact that the union building will contain dormitory facilities which will be available for use by Kansas physicians visiting the school. This will make it possible for them to live on the campus and eliminate the time consuming necessity of traveling across Kansas City for lodging. A second factor is that this will become a memorial symbolizing the co-operation between the Medical Society and the school. Following directly after the legislative approval of the Rural Health Program, it seems appropriate that the medical profession offer a tangible expression to the people of Kansas of its faith in the school and of its sincerity in working toward a sounder distribution of medical care for this state. And this gift from the profession will be a daily point of contact with the students at the school which should be of material assistance in making the students at the school conscious of the profession and of its interest in them.

The School of Medicine Today

In the second annual University of Kansas Medical School number of the Journal of a year ago, a statistical and factual report was made on the physical setup and accomplishments of your Medical Center. This year it is desired to report changes that

have occurred in the past year and to stress certain features not previously mentioned.

As in the past, the chief function and concern of the Medical Center is the instruction of students in medicine and the allied sciences. Table I indicates the status of the present student body. It will be noted that there is a total of 334 medical students, which is a gain of 24 over last year's total. There are 129 student nurses which is a gain of 42 over the previous year. There are also a greater number of technicians, therapists, dietitians, etc., which constitute a total gain of 76 for the entire student body which now numbers 594.

At the present time, there are over 200 applicants from Kansas for the 1949 freshman medical school class who meet minimum requirements. It may be possible, with increased appropriations from the present legislature, to accept about 100 applicants. This means that over 100 Kansas boys and girls, who have met full requirements for entrance to the Medical School, must be denied admission. Since admission to out-state schools is most difficult, it follows that at least 50 per cent of these fully qualified students must forego a medical education and plan to enter other fields of training. If the supply of physicians were plentiful, this would not be too disturbing, but since the reverse is true, particularly in our own state, it is a matter for much concern.

Next comes the question of how students are to be chosen for the 1949 class. It is unfortunate that about the only common yardstick of measurement is the grade average. It is readily acknowledged that grades do not always indicate the true worth, ability or potentialities of the student. Other factors will, no doubt, be taken into consideration, but the fact remains that grade average will play an important part. The admissions committee faces a most difficult and unwelcome task in choosing the 1949 class. They have already spent much time on this problem, and much more study will be required. Unintentional and unavoidable inequalities, injustices and hardships are inevitable, but it is certain that the committee will try to make as just and equable selection as is possible under the circumstances. If any member of the Society has a solution to the committee's dilemma, he should promptly appraise them of it.

Table II indicates the geographical source of the medical students. The senior class is a hold over from the war days and the army and navy student programs. Hence, the large number of out-state students in this class. The other three classes are post-war and conform to the usual geographical pattern.

Three major changes have been made in the student curriculum in the last year. First, in an effort to accommodate as many medical students as possible, the four quarter system has been established. Thus, the full calendar year is utilized for teaching instead of only nine months as was the previous case. Only three-fourths of the junior or senior class is present at any one time as one-fourth of the class is always on vacation. Second, didactic teaching has been materially reduced and replaced by small group bedside and patient contact teaching. This innovation of necessity requires more man hours of teaching and greater space. In other words, it is a more expensive but certainly more efficient method of instruction. The change was made even though funds were not available, but with the hope that sufficient funds might be made available in the future to properly implement this mode of teaching. Third,

TABLE I

ENROLLMENT 1948-1949

Medical Students:	*Men*	*Women*	*Total*
Freshmen	80	4	84
Sophomores	78	5	83
Juniors	77	8	85
Seniors	74	8	82
Total	309	25	334
Nursing School			129
Residents			49
Interns			13
Other Enrollment:			
Occupational Therapists			6
Physical Therapists			16
Medical Technicians			18
X-ray Technicians			3
Dietitians			3
Applied Basic Science Students			15
Post Graduate Specials			3
Graduate Students			5
Total			594

TABLE II

Senior Class:		Sophomore Class:	
Kansas	55	Kansas	76
Missouri	4	Missouri	6
New York	4	Puerto Rico	1
Arkansas	1	Total	83
California	1		
Colorado	1	Freshman Class:	
Maine	1	Kansas	82
Michigan	1	Missouri	1
Ohio	1	Oklahoma	1
Pennsylvania	1	Total	84
Washington	1		
Total	82		
Junior Class:			
Kansas	80		
Missouri	4		
Maryland	1		
Total	85		

junior students now function as ward clerks in the hospital and seniors serve in the out-patient department. This is a reversal of the previous method. To date, these changes are said to be working more satisfactorily and more efficiently than the old system.

Several additions to the physical plant have been made in the past year or are in the process of construction. On July 1, a children's orthopedic ward of 22 beds was opened. This was constructed by remodeling and adding to space on the sixth floor which had previously been used chiefly for living quarters. The governor's emergency building fund contributed $25,000 to the cost of construction and the remainder of the $43,000 total cost was borne by the Medical Center. This ward was chiefly constructed in an attempt to relieve the bed shortage at the time of polio epidemics. In the summer of 1946, there were 298 cases of acute poliomyelitis admitted to the Medical Center. One-half of the children's pavilion was closed and turned over for the housing of these children, thus depriving children with other conditions from hospital care. At the end of the polio child's isolation period, there were no beds elsewhere in the hospital where he could be transferred for orthopedic care. Thus, the new ward was created with the idea of relieving the bed shortage. Since the new ward has been full, usually with a waiting list since it has been opened, it is obvious that there is still a marked shortage of beds and in case of an epidemic of poliomyelitis, children suffering from other disabilities will have to forego hospital attention until some other time. It has always seemed to be the height of the "cart before the horse" idea as well as unguided emotional reasoning that there are ample funds with several agencies vying for the privilege of hospitalizing the victims of poliomyelitis when there are no hospital beds available. There is little point in giving a child a dime for an ice cream cone, if there are no ice cream cones available, or if, to obtain a cone, it must be taken from another child who also likes ice cream.

Practically completed and now partially in use is an additional floor to the Hixon Laboratory of Research. This floor will house an up-to-date animal house and was built at a total cost of $25,000. The legislature granted $20,000 of this and the remainder came from other sources. This addition was made necessary due to the increase in the Center's research activities since the war and in particular, Dr. Herbert Wenner's studies in poliomyelitis, which require large numbers of monkeys.

Nearing completion and possibly available about April 1, are the additional four floors to the connecting corridor. Construction cost was $700,000 and furnishings and equipment, an additional $200,000. This entire sum was obtained by legislative grant. This construction will provide for a new emergency room set-up on the basement level, expansion for the badly cramped x-ray department on the first floor and a new operating room suite on the fifth floor. The second, third and fourth floors will provide space for 88 beds. The hospital will not gain this number of beds, however, as some of the present bed space will need to be utilized as classrooms. Up to the present, there have been no classrooms in the hospital, so classes, of necessity, have been held in the already crowded corridors, an almost impossible situation. The new operating room suite will consist of five major operating rooms, a plaster and fracture room, tissue laboratory and a much larger utility and storage space.

On February 16, the legislature passed the rural health measure which appropriated $3,862,560 for new buildings and equipment for your Medical Center. This measure has attracted nationwide attention with much favorable comment and it is evident that the plan will be widely copied. Specific appropriations were as follows:

Project	*Capacity*	*Cost*
Psychiatric ward building	75 beds	$481,860.00
Chest diseases ward building	75 beds	481,860.00
Two floor addition to Eaton pavilion	75 beds	170,755.00
Two floor addition to out-patient building		306,395.00
New wing to nurses' home		432,630.00
Service building		811,957.50
Basic science building		757,102.50
Equipment		420,000.00

The federal government will contribute $460,000 toward the construction of the psychiatric and chest disease building. These funds, which were made immediately available when Governor Carlson signed the bill, will permit the departments now housed in the outmoded, squalid and cramped quarters of the old school near Southwest Boulevard to be moved to the main campus at 39th and Rainbow Boulevard. It will also provide housing for the last three years of the medical school curriculum instead of two and one-half. The present appropriation for the basic science building is for one wing only. When this building is completed, some time in the future, it will then be possible to house the entire four-year medical course on the Kansas City campus.

During the year, several important faculty changes have been made. You are well acquainted with some of these and they will be mentioned only briefly.

On July 1, Dr. Franklin D. Murphy assumed his duties as dean of the Medical School, replacing Dean Wahl who retired. Dean Murphy's three-point rural health program has received national acclaim and he is much sought as a speaker to enlighten other states as to this plan. Doctor Wahl remains with the Center as professor of pathology and head of the department of pathology.

Dr. Robert E. Stowell came to the Center from Washington University Medical School to head the newly created department of oncology, with the title of professor of pathology and oncology. Doctor Stowell and staff are already busy on an intensive cancer research project.

Dr. Eldred V. Thiehoff is the new head of the department of public health and preventive medicine and replaces Dr. E. G. McGavran in this capacity. Dr. Thiehoff received his A.B. and A.M. degrees from the University of Missouri, his M.D. from the University of Pennsylvania and his M.P.H. from Johns Hopkins University. Dr. Thiehoff came to the Center from Peoria, Illinois, where he was commissioner of health.

Miss E. Jean M. Hill has just assumed her duties as the new director of nurses. Miss Hill received her A.B. degree from the University of Kansas, her B.N. from Yale University and her M.S. in Administration in Schools of Nursing from Western Reserve University. Before returning to Kansas Miss Hill was instructor in nursing education at Teachers College, Columbia University, New York.

Two well known members of the faculty were lost through death, Dr. Lewis G. Allen, professor of clinical roentgenology, and Dr. J. S. Betz, instructor in ophthalmology. Their loss is deeply regretted.

The following is a list of faculty promotions during the year:

Buford G. Hamilton from associate professor of obstetrics and gynecology to clinical professor of obstetrics and gynecology.

Ferdinand C. Helwig from associate professor of pathology to clinical professor of pathology and oncology.

Laverne B. Spake from associate professor of otorhinolaryngology to clinical professor of otorhinolaryngology.

William C. Young from associate professor of anatomy to professor of anatomy (Lawrence Division).

Tom R. Hamilton from assistant professor of pathology to associate professor of pathology and oncology.

Russell C. Mills from assistant professor of biochemistry to associate professor of biochemistry (Lawrence Division).

Paul W. Schafer from assistant professor of surgery to associate professor of surgery and oncology.

Ward W. Summerville from associate professor of pathology to associate professor of pathology and oncology.

Max S. Allen from associate in medicine to assistant professor of medicine.

M. L. Bills from associate in neurology to assistant professor of psychiatry and neurology.

G. L. Harrington from associate in neurology to assistant professor of psychiatry and neurology.

David W. Robinson from associate in plastic surgery to assistant professor of surgery and oncology.

TABLE III

Cancer Research $118,979.25
Donors:
National Cancer Institute; Kansas Division American Cancer Society; Los Alamos Division of Atomic Energy Commission; American Cancer Society; American Cancer Institute; Mrs. L. L. Burchinal, Formoso, Kansas; S. G. Normand, Parkville, Missouri; Mrs. Wesley Sorg, Denison, Kansas; Miss Neva Clark, Chapman, Kansas; J. O. Williams, Veterans Administration, Kansas City, Missouri; Mrs. J. A. Brody, Kansas City, Missouri; Fortnightly Club, Lawrence, Kansas; Mrs. W. E. Lyon, Broken Arrow, Oklahoma; Charles R. Winger, Johnson, Kansas; W. T. Jones, Johnson, Kansas; Victor Dimitt, Johnson, Kansas; Wilma N. Winger, Johnson, Kansas; J. N. Hugg, Kansas City, Kansas; Edyth Spicer, Joplin, Missouri; and Mr. and Mrs. Cornelius Ashley, Kansas City, Kansas.

Poliomyelitis Research $60,300
Donor:
National Foundation for Infantile Paralysis.

Lectureships and Scholarships $36,500
Donor:
E. J. Curran, M.D.; Mrs. Logan Clendening, Mrs. A. J. Anderson, Lawrence, Kansas; T. W. Cloney, Sedalia, Missouri; L. L. Marcell, Kansas City, Kansas; C. T. Thompson, Kansas City, Missouri; A. M. Ginsberg, M.D., Kansas City, Missouri, and Mrs. Samuel S. Murdock, Jr., Sabetha, Kansas.

Teaching of Psychiatry $37,460
Donor:
United States Public Health Service.

Cardiovascular Research $20,005
Donor:
H. J. Haskell, Kansas City, Missouri; O. J. Connell, Jr., El Dorado, Kansas, and National Emergency Special Equipment Fee Fund.

Other Research Projects $19,560
Donor:
United States Public Health Service; Mr. George Breon, Kansas City, Missouri, and Mr. Dixon Fagerberg, Prescott, Arizona.

Furnishings, Equipment, Books, etc. $14,001.01
Donor:
Mrs. Logan Clendening; Dr. and Mrs. L. B. Spake; Shawnee-Mission Chapter, American Red Cross.

Buildings $5,000
Donor:
William Volker Fund, Kansas City, Missouri.

Cancer Relief $325
Donor:
Charles H. Stoner, Kansas City, Missouri, and Miss Dessie Myers, Kansas City, Missouri.

Sylvia Allen from instructor in psychiatry to associate in psychiatry and neurology.

E. H. Trowbridge, Jr., from instructor in psychiatry and neurology to associate in psychiatry and neurology.

Damon Walthall from instructor in pediatrics to associate in pediatrics.

A. M. Ziegler from instructor in surgery to associate in surgery.

T. R. Jones from assistant in medicine to instructor in medicine.

Gordon Voorhees from assistant in medicine to instructor in medicine.

Harry Statland from assistant in medicine to instructor in medicine.

For its existence, your Medical Center depends upon funds from three principal sources. First, the state legislature and, as already noted in this report, they have been generous. Second, federal grants in aid, and third, contributions from institutions, societies and individuals. It is gifts of this third group we now wish to report. Table III lists the gift, donor and purpose of the gift for all contributions received in the past year. It is of interest to note that the bulk of these funds come from without the state.

It is felt that in general there is much greater interest throughout the state in the Medical Center and its problems. The future looks brighter, problems are in the process of being solved and it is hoped that the people of Kansas will be able to have a feeling of pride in their Medical Center.—*James B. Weaver, M.D.*

Medical School Appropriation is Granted

An important moment in the history of medicine in Kansas is pictured above. Governor Frank Carlson, seated at his desk, is signing the bill which appropriates $3,862,560 to the University of Kansas School of Medicine for expansion of present facilities. This measure, popularly known as the Rural Health Bill while it was being debated in the legislature, was approved by the Governor at the ceremony shown above on February 18, 1949. Standing at the Governor's right is Dr. C. H. Lerrigo. Grouped around the desk, from left to right, are: Representative John L. MacNair, one of the sponsors of the bill; Charles B. Newell, business manager of the School of Medicine; Representative Paul R. Shanahan, co-sponsor of the bill; Dr. J. H. A. Peck, president-elect of the Kansas Medical Society; Dr. Franklin D. Murphy, dean of the school of Medicine; Representative Lawrence J. Blythe, co-sponsor of the bill, and Dr. O. W. Davidson, president of the Kansas Medical Society.

Case Reports from the University of Kansas Medical Center

Clinical Pathological Conference

Edited by Glen R. Shepherd, M.D., and Mahlon H. Delp, M.D.

Case History

A 64-year-old white male, a tavern-owner and bartender, entered the hospital on October 29, 1948, and died November 11. His chief complaints on admission were jaundice, swelling of the legs, and a hernia.

About six months prior to admission, the patient noticed for the first time a right inguinal hernia, which had always been reducible and gave him little trouble. Six weeks before admission, he noticed that his ankles and legs were swollen but without pain. The swelling became more marked in the following month. He treated it with hot packs and the swelling decreased greatly.

Ten days previous to admission, the patient was noted to be yellow by a customer at the bar. About six days later, he became acutely ill with nausea and vomiting and the hernia was no longer reducible. The vomitus contained some coffee-ground material; the stools were black in color, and the urine was quite dark. He had some right upper quadrant pain. He was put on a low fat diet, the jaundice regressed, stools became normal brown in color, and his urine was less highly colored. There were no other specific complaints in the past six months except that he had noticed some loss of energy and strength, together with an eight-pound weight loss. About six weeks before admission, he claimed having stopped heavy drinking. Until then, he had drunk as much as a pint to a fifth of whiskey daily for years.

Nothing significant was elicited in the past history or the family history. In addition to the foregoing, the system review revealed that he had had occasional nausea and vomiting for a number of years, usually associated with excessive alcoholic intake and that his food intake had been poor for years, especially while drinking excessive amounts.

Physical examination showed an overweight white male not appearing acutely ill. The skin had an icteric tinge, with conjunctiva definitely icteric. Fundoscopic examination showed minimal arteriosclerosis. No abnormal findings appeared in head, neck, heart, or lungs; B. P. 120/70; pulse 84, full and regular. Abdomen was moderately distended with a fluid wave noted. The liver was enlarged four fingers below the costal margin, but it was not tender on admission. There was a large right inguinal indirect hernia which was reducible. The prostate felt neither enlarged nor nodular. One plus pitting edema of the legs was noted.

Laboratory examination revealed the following: urinanalysis—faint trace albumin, 1.2 per cent sugar, numerous pus cells per hpf, occasional hyaline cast; blood study—RBC 2,880,000; Hb 51 per cent; WBC 10,450; differential showed polys 59 per cent, monos 10 per cent, eosinophiles 4 per cent, basophiles 1 per cent; serology negative. Blood chemistry—NPN 34.5; sugar 142 mgm per cent; sodium chloride 390; total protein 4.45 with albumin 2.10 and globulin 2.35. Hepatogram showed icteric index 20 units, cephalin cholesterol three plus, thymol turbidity eight units, cholesterol 200, cholesterol esters 50 per cent, prothrombin time 50 per cent of normal, urine urobilinogen 12.8 units in two hours, fecal urobilinogen 40 mgm in 24 hours. The sedimentation rate was 12 mm. in one hour.

Gastric Analysis			Glucose Tolerance Test		
Hour	*Free HCl*	*Total Acid*	*Hour*	*Blood sugar*	*Urine sugar*
F	0	7	F	169	3.0%
15 min.	2	10	1	296	3.3
30 min.	4	8	2	328	3.3
45 min.	4	10	3	342	6.3
60 min.	....	....	4	334	10.0
			5	312	6.6

EKG showed ventricular premature contractions, intraventricular conduction defect, myocardial damage, probable basis being coronary sclerosis.

After entering the hospital, the patient was placed on a diabetic and Patek diet but did not eat well and had considerable nausea. He could not be said to have eaten enough to have been on a diabetic regimen. Five days after admission he vomited some coffee-ground material, became drowsy, and after this time showed increasing lethargy and irrationality. The blood carbon dioxide combining power was 65.3 volumes per cent. He also developed edema, a tender liver edge, and refused to eat. On his ninth day, a Levine tube was inserted but no food could be given because of repeated vomiting. Gastric suction showed coffee-ground material and bright blood during the last few days. He was given the following medications: intravenous glucose to 4000 cc. daily, two blood transfusions, one unit serum albumin, crude liver and vitamin B parenterally, hykinone, and penicillin. He developed increasing icterus, with an index of 40 units. Lethargy became more pronounced with some aimless movements. On his 13th hospital day he developed spasticity of the left arm and hypotension with blood pressure of 60/40, and ceased respiration at 12:30 a.m. During the last 24 hours, the patient was prac-

tically anuric, with only 50 cc. of extremely dark urine produced. The urine output had been adequate until the last day.

Differential Diagnosis

Dr. Delp, Chairman: Mr. Bauer, please contribute your discussion of the differential diagnosis.

Mr. Bauer, Student: With this history of liquor drinking for years, the first diganosis which comes to mind is alcoholic cirrhosis. In the differential diagnosis, with sudden onset of pain, one must think of impacted stone in the common duct (which is usually chronic and unlike the present case), of carcinoma of the head of the pancreas (which can't be entirely ruled out on the history alone, although it too usually has a more chronic course). The rapidity of this patient's course brings in the possibility of acute or subacute yellow atrophy. Hemochromatosis is another possibility, but can be ruled out not only by its rarity but also because such a case was presented here recently. This case seems to me to be alcoholic cirrhosis, which will explain the findings of hypoproteinemia and edema of the extremities. Although the abdomen was not tapped to demonstrate fluid, the increasing abdominal pressure from fluid might explain the hernia. The nausea and vomiting occurred when the man's illness was established and probably because of obstruction of liver functions. Esophageal varices could explain the vomiting of coffee-ground material and later the red blood after Levine tube was put down.

A gastric acidity showing hypochlorhydria is not easily explained on the liver findings. But low blood chloride has an influence on the stomach's ability to secrete acid. Chronic gastritis from alcoholism might lessen gastric acidity.

The glucose tolerance curve rises too late to maximum for a typical diabetic curve. One might theorize that chronic pancreatitis and decreased liver function impair the carbohydrate metabolism.

Hepatoma, either primary or secondary, or cholangioma should be considered in the differential diagnosis and these tumors are associated with cirrhosis.

Dr. Delp: What was the cause of death? Did the patient have diabetes?

Mr. Bauer: The patient died from inanition, hypoproteinemia and anemia, with a downhill course. I wouldn't care to state whether the patient had diabetes mellitus.

Dr. Wheeler: I first saw this man on a house call when he first became acutely ill. He had a strangulated inguinal hernia. Five days later he came to the hospital. His stools were unquestionably black. I saw his vomitus on one or two occasions and it was definitely coffee-ground in character. He had an acetone breath from the start which continued throughout his hospital stay, although his blood carbon dioxide combining power was 65 volumes per cent from time to time.

Pathological Report

Dr. Storsteen, Gross Pathology:

Icterus; one plus edema of the legs and back; right inguinal hernia.

3000 cc. peritoneal fluid, clear.

100 and 300 cc. clear fluid respectively in right and left pleural cavities; each lung weighed 600 grams and appeared congested.

Heart weighed 375 grams, soft and flabby with moderate atherosclerosis coronary arteries.

Liver weighed 1540 grams, of firm consistency except for one area which felt soft and mushy, surface nodular and cut with resistance; fibrous strands separated greenish-brown, yellow, or red parenchyma; soft mushy mass in right lobe, rusty brown in color, five cm. diameter, appeared well-circumscribed; five other similar areas noted, smaller, with diameters five to 15 mm.

Kidneys weighed 200 grams each and felt rather soft.

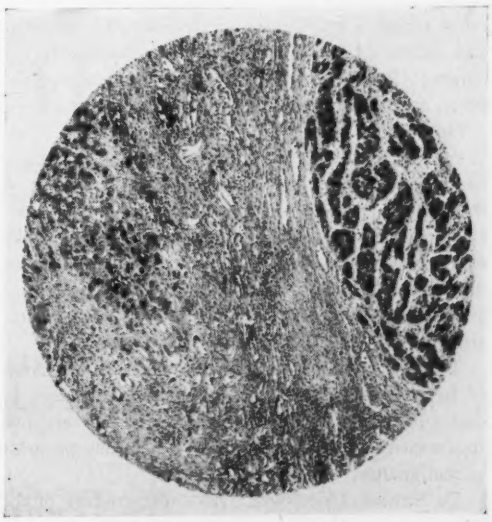
Esophagus darkly pigmented with hemorrhage into mucosa and vessels dilated; stomach contained 100 cc. of brownish-black material.

Brain weighed 1500 grams and showed no evidence of abnormality on cut section.

Gross Diagnosis:

Portal cirrhosis, multiple hepatoma, esophageal varices, pulmonary congestion and edema, flabby heart, bilateral hydrothorax, hydroperitoneum, and moderate atherosclerosis of coronary arteries and aorta.

Dr. Boley, Microscopic Pathological Report:



Photomicrograph of liver section. The darker cells represent the tumor.

The tumor nodule in the right lobe of the liver is a primary hepatoma with one large tumor and several satellites. We weren't able to express tumor thrombi from veins. Decreasing size of the lobules, distortion and inability to find central veins is apparent. There are proliferating bile ducts but no evidence of duct malignancy. The tumor tissue is not very undifferentiated and not much different from normal liver cells. Arrangement and architecture is characteristic of carcinoma of hepatic cells with necrosis in the tumor. There is a pseudoencapsulation around the tumor but invasion is apparent in many places into portal spaces. Because of the proliferating appearance of bile ducts, it is harder to pigeonhole this tumor. One might think of a malignancy rather than a proliferative process. However, even the bile ducts showing distorted nuclei are regular in staining and size.

Discussion

Dr. Boley, Pathologist: In 27 cases of carcinoma of the liver admitted to the Medical Center Hospital, the mean age was 58 years with a 2.3/1 ratio of males to females. The ages ranged from 13 to 85 years. Anemia was usually present, with average Hb 65 per cent. There was a slight to moderate leucocytosis (8,000 to 15,000) in 47 per cent of the cases, and moderate to marked leucocytosis (26,000 to 48,000) in 29 per cent. Eighteen per cent had jaundice. The average liver weight was 2850 grams. Cirrhosis was present in 59 per cent of these cases of carcinoma of the liver. Of this 59 per cent with cirrhosis, 78 per cent were hepatic and 45 per cent bile duct cirrhosis (some showing both types). The distribution of metastases was 37 per cent to lung, 33 per cent to regional lymph nodes, 11 per cent to pleura, and seven per cent were peritoneal. In another series of 1300 cases of cirrhosis, 4.5 per cent had cancer of the liver. The most commonly occurring clinical findings seem to be leucocytosis, fever, anemia, and weight loss.

Dr. Wahl, Head, Pathology Department: Carcinoma of the liver is uncommon while cirrhosis is common. In this case, the most striking feature of the liver is the extreme distortion in architecture, fibrosis, and irregular hyperplasia. Pathologists like to classify tumors but it is hard to do so in these This particular tumor caused me a lot of trouble in classification because some fields looked like cholangioma and others looked like hepatoma.

The cause of cirrhosis may be related to the cause of hepatoma. Cirrhosis is produced by changes in diet. In experimental induced cirrhosis, atypical regenerative phenomena appear which may progress to malignancy.

Dr. Stowell, Oncologist: An understanding of the causes of human cancer is important. We know a little more of the cause in this type of cancer. There is a frequent association between cirrhosis and cancer in man. The difference in incidence in different localities suggests an environmental factor, perhaps diet. One and two-tenths per cent of Europeans with cirrhosis have cancer, as do 2.2 per cent of Americans, and in certain of the oriental groups with cirrhosis 14 per cent are said to have cancer. Butter yellow substances will produce tumors, experimentally. Carbon tetrachloride produces liver tumors as will low protein diets, and in these there is an accompanying fibrosis, with changes in morphology of cells, and regenerating types of cells on microscopic examination.

Riboflavin in diet protects against experimental tumors in animals, as will cystine. This is not necessarily true in human tumors.

Liver exposure to a toxic agent causes a reaction of liver cells which may be common to the cause of liver cancer, since fibrosis accompanies each. The alcoholic regimen is important by inducing a deficiency of certain food factors.

Death usually occurs six months after tumor of the liver is diagnosed. Alteration of the diet won't then influence the course of the tumor. There may in the future be chemotherapeutic agents to use. It is known that normal liver cells develop different types of metabolic patterns under the influence of toxic substances. If this abnormal metabolism could be interrupted, it might interrupt the course of the tumor. However, there is not yet complete experimental evidence to uphold this hypothesis.

Dr. Delp: There is another interesting element about the prognosis in these patients. Dr. Bartlett has had a rather unusual experience with a so-called hepatoma. I would like to have him tell us about that patient.

Dr. Bartlett: The particular patient referred to was operated on in February, 1947. In a short time, he had developed a large tumor in the right upper quadrant of the abdomen. Operation proved it to be a large liver tumor. Biopsy was taken and reported as a primary hepatoma of the liver cell. He eventually recovered from the operation and is now still alive 22 months later, without x-ray therapy or other treatment except routine supplements to help protect the liver. He has developed a rather severe nephritis which amounts to a high degree of albuminuria and a slight elevation of the NPN, but what his course will be we don't know. The tumor has continued to grow gradually and still is present, being stony hard. The man is working at his job, however.

Dr. Major, Chief of Medicine: Whether this patient had diabetes mellitus is another interesting feature. We had a patient who had diabetes with

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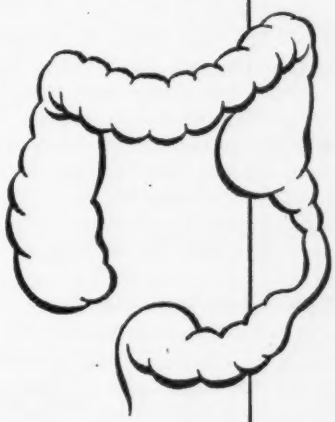

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SEARLE RESEARCH IN THE SERVICE OF MEDICINE

*Collins, E. N.: The Diagnosis and Treatment of Irritable Colon: Physiologic, Local, Irritative and Psychosomatic Factors, M. Clin. North America 32:398 (March) 1948.

cirrhosis. However, in that case, the diabetes had been present for 15 years. I would like to ask Dr. Shepherd's opinion about the diabetic status of this patient.

Dr. Shepherd: Among the many functions of the liver, carbohydrate metabolism occurs in part. This patient's liver was not able to maintain such functions, with a consequent impairment of carbohydrate utilization. In that sense, this patient had diabetes mellitus. In the sense of there being a lesion of pancreatic islets with an insulin deficiency, or a pituitary disorder, there is no such diabetes present.

The cirrhotic feature of this case brings up some interesting speculations. Since the earliest lesion in portal cirrhosis with fat infiltration is an anoxia of the hepatic cells, and anoxia is thought to produce the fat infiltration, one wonders what would be the effect of such a respiratory enzyme as cytochrome C administration early in such cases. We know the effect on fat transport out of the liver of methionine and the liable methyl group derived from it and from choline. Of course, these agents would not be expected to affect the tumor, but what might they have done in relieving the onset of cirrhosis?

Dr. Delp: There is a school of thought among students of carbohydrate metabolism which assumes the presence of a hepatic factor in every case of diabetes and they indeed refer to hepatic diabetes. Dr. Wheeler, assuming this patient died of hepatic insufficiency, would you alter your therapy if you had it to do over again and what index of improvement would you use?

Dr. Wheeler: If there is any index, it would be the albumin deficiency. Unfortunately, serum albumin restitution is expensive. I would have used more but for that and considering that only one unit was available.

Dr. Delp: Should we have had a punch biopsy of the liver?

Dr. Wheeler: It would have been a useful thing to have done, diagnostically, considering Dr. Statland's 33 per cent success in hitting tumors of the liver with a punch. But it would have had no therapeutic value.

Question: What did the pancreas look like?

Dr. Boley: The pancreas was normal, weight 175 grams, with no fibrosis nor variation of the islet cells.

Dr. Stowell: Although we don't have time to go into it, there is a juvenille atypical picture in addition to the typical picture of cancer of the liver.

Summary

A less common type of neoplasm is represented in this presentation. It is unique because of origin within an organ the site of a long existing inflammatory process. Dr. Stowell has alluded to the interesting conjectural possibilities in the pathogenesis of primary hepatoma. The clinician's problem is obviously confounded in a picture seemingly that of inflammatory disease only, but in reality also neoplastic. The terminal features of the case were clearly those of progressive hepatic insufficiency, and eventual hepatic coma.

Annual Meeting, May 9-12, 1949

Plans are rapidly being completed for the 90th annual session of the Kansas Medical Society to be held at Topeka, May 9-12, 1949. All scientific sessions, scientific and commercial exhibits, and movies will be at the Topeka Municipal Auditorium, Eighth and Quincy Streets.

The usual outline for the program will be followed. On Monday, May 9, there will be the customary golf tournament and trap shoot, with a banquet for the sportsmen that evening. Scientific sessions will begin on Tuesday morning, continuing through Thursday afternoon. The annual banquet will be held at the Topeka High School cafeteria on Wednesday evening, with special recognition for all past presidents of the Kansas Medical Society. On Tuesday evening there will be a banquet for alumni of the University of Kansas School of Medicine.

A number of well known speakers will take part in the scientific program. Two speakers who have been invited to present papers have not yet replied to the invitations sent them, but the following physicians have sent acceptances to Dr. Orville R. Clark, chairman of the Committee on Scientific Program, and Dr. Byron J. Ashley, chairman of the Committee on E.E.N.T. Program:

Robert J. Crossen, M.D., St. Louis, Missouri—Obstetrics and Gynecology.

Walter A. Fansler, M.D., Minneapolis, Minnesota—Proctology.

William D. Gill, M.D., San Antonio, Texas—Otology, Laryngology, Rhinology.

Thomas T. Mackie, M.D., Winston-Salem, North Carolina—Internal Medicine.

Paul A. O'Leary, M.D., Rochester, Minnesota—Dermatology.

Karl H. Pfuetze, M.D., Cannon Falls, Minnesota—Tuberculosis.

Joseph H. Pratt, M.D., Rochester, Minnesota—Surgery.

Henry K. Ransom, M.D., Ann Arbor, Michigan—Surgery.

C. Wilbur Rucker, M.D., Rochester, Minnesota—Ophthalmology.

W. A. Sodeman, M.D., New Orleans, Louisiana—Internal Medicine.

The complete program will be published in the April issue of the Journal.

REFRESHER COURSE IN GENERAL SURGERY

April 25, 26, 27, 1949

UNIVERSITY OF KANSAS MEDICAL CENTER, KANSAS CITY, KANSAS

FACULTY

Guest Instructors:

WAYNE C. BARTLETT, M.D., Chief of Surgical Section, Wichita Clinic, Wichita, Kansas.
GUY A. CALDWELL, M.D., Chief of Orthopedic Section, Ochsner Clinic, New Orleans, Louisiana.
REED M. NESBIT, M.D., Professor of Urology, University of Michigan School of Medicine, Ann Arbor, Michigan.
DALLAS B. PHEMISTER, M.D., Profesor of Surgery, University of Chicago School of Medicine, Chicago, Illinois.

University of Kansas Faculty:

MAX S. ALLEN, M.D., Assistant Professor of Medicine.
DONALD F. COBURN, M.D., Associate in Neurosurgery.
LAWRENCE P. ENGEL, M.D., Associate Professor of Surgery.
GRETCHEN GUERNSEY, M.D., Associate in Anesthesiology.
PAUL H. LORHAN, M.D., Associate Professor of Anesthesiology.
THOMAS G. ORR, M.D., Professor of Surgery.
DAVID W. ROBINSON, M.D., Assistant Professor of Surgery and Oncology.
MERVIN J. RUMOLD, M.D., Associate in Surgery.
PAUL W. SCHAFER, M.D., Associate Professor of Surgery
FRANK R. TEACHENOR, M.D., Clinical Professor of Surgery. (Neurosurgery).
GALEN M. TICE, M.D., Professor of Surgery (Urology).
JAMES B. WEAVER, M.D., Clinical Professor of Orthopedic Surgery.
WILLIAM P. WILLIAMSON, M.D., Associate in Neurosurgery.

SUBJECTS TO BE DISCUSSED

Postoperative Complications of Gall Bladder Surgery.
New Developments in Surgery of the Colon.
The Rationale of Regional Lymph Node Dissection.
Circulatory Complications of Traumatic Injuries of the Extremities.
Pulmonary Complications Following Surgery.
The Treatment of Hydrocephalus.
The Diagnosis and Treatment of Low Back Injuries.
Some Problems in the Diagnosis and Treatment of Stomach Lesions.
Ureteral Sigmoid Anastomosis by Direct Elliptical Connection.
Bone Tumors.
The Use of Homogenous Bone.
Some Pitfalls in the Diagnosis of Intermittent Hydronephrosis.
Shock.
Regional Enteritis.
Asymptomatic or Minimally Symptomatic Radiographic Densities of the Chest.
Operative Clinics—General Surgery, Thoracic Surgery, Orthopedic Surgery, Neurosurgery, Plastic Surgery and Urology.

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COUNTY SOCIETIES

A meeting of the Smith County Medical Society was held January 18 at the home of Dr. Victor E. Watts, Smith Center, and the following officers were elected: president, Dr. B. Hartman, Kensington; secretary, Dr. Watts; delegate to state meetings, Dr. John Lathrop, Smith Center.

* * *

Dr. Robert L. Stevens was elected president of the Anderson County Society at a meeting held at Garnett January 20. Dr. A. J. Turner was named vice president, and Dr. Ralph E. White was selected to be secretary-treasurer. Delegates are Dr. White and Dr. C. B. Harris, Jr.

* * *

The Franklin County Society entertained the Auxiliary and the Miami County Medical Society and its Auxiliary at a dinner meeting at the Ottawa Country Club January 26. Dr. Franklin D. Murphy, dean of the University of Kansas School of Medicine, was guest speaker.

* * *

Two physicians from Goessel, Dr. A. K. Ratzlaff and Dr. E. S. Rich, presented a scientific program before the Marion County Society at a meeting held February 2 at Marion. Dr. Ratzlaff spoke on "The Use of Saline in the Rubin Test for Tubal Patency," and Dr. Rich discussed "The Diagnosis and Treatment of Infertility."

* * *

The Labette County Society endorsed the Red Cross blood program in the county at a meeting held at Parsons January 26. Plans were made for members to assist in the blood donor program.

* * *

A meeting of the Miami County Society was held at Paola January 28. Dr. Damon Walthall, Kansas City, spoke on pediatrics and Dr. Philip L. Byers, Kansas City, presented a discussion on cardiac diseases.

* * *

The Sedgwick County Society, in cooperation with the Veterans Administration Hospital at Wichita, presented a clinical conference at the hospital February 18 and 19.

* * *

The following officers were elected to serve the Rice County Society at a meeting held at Lyons January 26: president, Dr. R. Leonard; treasurer, Dr. George Gill. For the scientific program three medical films were shown, "Pulmonary Lobectomy," "Intravenous Anesthesia," and "Medical Service in the Invasion of Normandy."

Dr. J. R. Prichard was re-elected president of the Bourbon County Society for 1949, and Dr. Leland P. Randles was named to serve again as secretary-treasurer of the group.

* * *

Dr. R. Bruce McVey was installed as president of the Clay County Society at a meeting held at Clay Center in January. Dr. L. D. Bowles of Clifton is serving as secretary.

* * *

The Nemaha County Society met in January in Seneca and elected the following officers: president, Dr. Conrad M. Barnes; vice president, Dr. R. E. Capsey; secretary, Dr. Edward A. Stapleton, Jr.

* * *

Dr. Vincent T. Williams of Kansas City, editor of the Jackson County Medical Bulletin, was guest speaker at a meeting of the Shawnee County Society held February 7 at Topeka. He spoke on medical economics and medical legislation.

* * *

Dr. J. G. Conley was elected president of the Crawford County Society at a meeting held February 3 at Pittsburg. Dr. W. G. Rinehart was named vice president and Dr. J. D. Pettet, secretary.

* * *

The Pawnee County Society has named the following officers for 1949: president, Dr. S. T. Coughlin; vice president, Dr. T. R. Fraser; secretary, Dr. O. R. Cram.

Average Age of Physicians

The average age of physicians in the United States is slightly less today than it was at the outbreak of World War II, according to a report issued last month by the Bureau of Medical Economic Research of the American Medical Association. The statistics include interns, residents and doctors not in active practice and reflect the relatively large number of physicians trained since 1940.

The median age of the doctors of the nation is 44.4 years, compared to 45.8 years in 1940. For Kansas the median is 46.6 years. The percentage of all physicians under 50 years rose from 57.5 in 1940 to 60.2 in 1948. In the age group 35 to 49 the percentage rose from 31.4 to 36.5.

AO Consultant to Navy

Dr. Paul Boeder, director of American Optical Company's Bureau of Visual Science, has accepted an invitation from the Office of Naval Research to act as principal consultant on a Navy-sponsored research project in the field of spatial perception. Dr. Boeder will collaborate with a number of research scientists at Columbia University.

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Conference of County Society Officers

The second annual conference of officers of the component county organizations that make up the Kansas Medical Society was held at the Jayhawk Hotel, Topeka, on Sunday February 6, 1949. Although icy highways prevented many who had planned to attend from doing so, all sections of the state were represented. Also present were a number of officers and councilors of the Society and the chairmen of various committees.

The meeting was opened by Dr. O. W. Davidson, president, who explained that many physicians who had attended the first such conference last September had asked the Society to repeat the program for the benefit of new officers. At their suggestion a date was chosen early in the year, shortly after new officers were installed, so that they might have the benefit of the instructions throughout their terms of office.

Dr. Davidson introduced Miss Marian Cook, who is in charge of membership records at the Society office. She displayed samples of alphabetical and county records maintained in the office and asked the co-operation of county secretaries in furnishing complete information on new members and adequate details in reporting dues and assessments, honorary memberships, and service memberships.

Dr. J. L. Lattimore, treasurer, reported briefly on the expenditure of Society funds, and then told of bills pending in the Kansas legislature in which the profession is interested, those pertaining to rural health, social welfare, adoptions, autopsies, deduction of medical expenses from state income tax, hospital districts, logopedics, and vital statistics.

Luncheon was served to the group at noon, and a number of guests, senators and representatives in the Kansas legislature, were present. Dr. Lattimore, who is also a member of the legislature, introduced the guests.

The afternoon program was opened by speakers from two allied organizations. Mrs. Charles H. Miller, president-elect of the Woman's Auxiliary to the Kansas Medical Society, and Mrs. Clyde D. Blake, president, told of the work of the Auxiliary and solicited the support of all physicians in increasing Auxiliary membership. Miss Regina Lewis, president of the Kansas Medical Assistants' Society, reported a membership of 478 in that group and outlined their objects.

Dr. L. S. Nelson spoke briefly on public health problems, the Kansas State Board of Health, and its budget.

A discussion of medical public relations was introduced by Mr. Oliver E. Ebel, executive secretary, who outlined a positive program to demonstrate to the people of Kansas that the profession in this state is interested primarily in providing good medical care for all. Then followed a report on the Society's biggest public service project, Kansas Physicians' Service, by Dr. Conrad M. Barnes, president of that group. He introduced Mr. Proctor Redd, director of physician-hospital relations for Blue Shield. Mr. Redd spoke on Blue Shield as a public relations medium.

Dr. F. R. Croson, first vice president of the Society, told of plans for the construction of a Union Building on the campus of the University of Kansas School of Medicine and announced that the Society will soon begin a campaign to solicit $50,000, through contributions from individual physicians, to be used for that building.

Dr. Davidson concluded the outlined program with a report on Society activities and plans for the annual meeting, May 9-12, 1949, at which time special recognition will be given all past presidents. He invited questions from the floor, and a number of subjects were discussed, the A.M.A. assessment, Blue Shield, medical care for veterans, pending legislation, and licensure of physicians from foreign countries.

Cancer Film Available

A new medical film, "Cancer: The Problem of Early Diagnosis," is now available for showing at medical society meetings, according to announcement made recently by Dr. Orville R. Clark, chairman of the Kansas Medical Society's Committee on Control of Cancer and chairman of the Professional Education Committee of the Kansas Division, American Cancer Society. The film is the first of six motion pictures being produced over a two-year period.

The film combines modern cancer surgery with animated charts and a historical sequence showing statistics on sites of cancer. Shots of cancer operations are reproduced on the color screen with a detail that was considered unusual when the picture was shown for the first time at a preview in New York in January.

Other films in the series will teach the techniques of early diagnosis of breast, intra-oral, lung and esophageal, gastro-intestinal and skin cancer.

Produced by Audio Productions, in New York City, the picture is a 16-millimeter sound film. It will be distributed by both the National Cancer Institute and the American Cancer Society. Local requests may be referred to the Kansas Division, American Cancer Society, 506 New England Building, Topeka, Kansas.

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ACTIVITIES OF MEMBERS

Dr. D. R. Bedford, Topeka, recently took the examinations of the American Board of Internal Medicine and is now a diplomate of the board.

* * *

Dr. Hugh A. Hope, Hunter, discussed health problems before a meeting of the Mitchell County Teachers' Association at Beloit February 5.

* * *

Dr. F. C. Beelman, Topeka, secretary of the Kansas State Board of Health, was in Washington, D. C., last month to attend the first meeting of the National Committee on Vital and Health Statistics. He was named a member of the committee by the Surgeon General of the Army when the State Department called for the establishment of such a body.

* * *

Dr. Andre Baude, formerly with the Kansas State Board of Health, is now engaged in private practice in Topeka. Dr. F. K. Albrecht, formerly medical editor for the Williams and Wilkins Publishing Company, succeeds Dr. Baude with the Board and is director of the Division of Tuberculosis Control.

* * *

Dr. Saul Zizmor, Chetopa, spoke on "Trends in Modern Medicine," at a meeting of the Home Culture Club of Chetopa February 1.

* * *

Dr. Fred F. Dozier, Herington, has been appointed health officer of Dickinson County. Dr. F. E. Richmond, Stockton, has been named to serve Rooks County in the same capacity, and Dr. D. C. McCarty, Medicine Lodge, will serve as health officer in Bourbon County.

* * *

Dr. R. G. Powell, Galena, addressed the Lions Club there on February 1 on the work being done by the American Heart Association. The club voted to assist in the drive for funds for the association.

* * *

A discussion of socialized medicine was presented to the Rotary Club of Pratt recently by Dr. M. E. Christmann of that city.

Preventive medicine requires not only the cooperation, consent, and understanding of the individual who is to be benefited; oftentimes he must take the initiative—he must realize that it is just as important to seek advice from his physician on how to keep well as it is to call the physician for help when illness strikes.—Med. in the Changing Order, Rep. N. Y. Acad. Med. Comm., Commonwealth Fund, 1947.

DEATH NOTICES

AUGUST PAUL FLECKENSTEIN, M.D.

Dr. A. P. Fleckenstein, 71, an active member of the Northwest Kansas Medical Society, died at his home at Selden January 28. He was graduated from the Kansas City College of Medicine and Surgery in 1916 and began practice in Kansas immediately, opening an office at Herndon. In 1942 he moved to Selden. At the time of his death he was serving as county health officer and was a member of the staff of the Thomas County Hospital. Among the survivors is a son, Dr. Charles S. Fleckenstein, who is also a member of the Kansas Medical Society.

* * *

EUGENE MAXIMILIAN WIEDENMANN, M.D.

Dr. E. M. Wiedenmann, 59, assistant superintendent at the Topeka State Hospital for the past 11 years, died January 29 after a month's illness. He was born in Germany and received his medical education there, graduating from the University of Freiburg. During World War I he was a medical officer in the Germany army, and after the war he engaged in private practice in Mexico City. He came to this country in 1928 and became a citizen in 1937. He was an active member of the Shawnee County Medical Society.

* * *

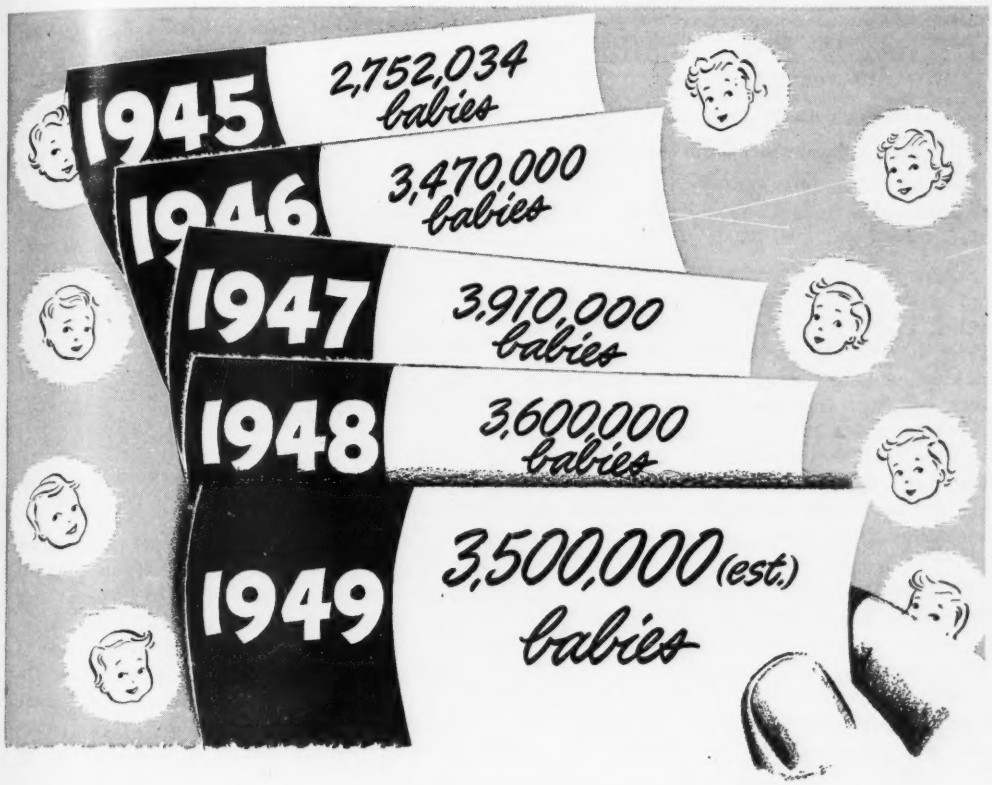
CHARLES HARRY MIELKE, M.D.

Dr. C. H. Mielke, 75, an honorary member of the Wyandotte County Society, died January 30 at his home in Kansas City. He was born in Berlin but came to this country before studying medicine. He was graduated from the College of Physicians and Surgeons in 1900 and began practice in Kansas City the following year. During World War I he served with the medical corps and received an injury to his eyes which later resulted in poor vision and forced his retirement from practice about ten years ago.

* * *

JAMES GILMER SANDIDGE, M.D.

Dr. J. G. Sandidge, 78, died at his home at Mulberry February 6 after an illness of several months. A graduate of the Missouri Medical College, St. Louis, in 1893, he received his Kansas license in 1901 and had practiced in Mulberry since that time. He was an honorary member of the Crawford County Society.



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ABSTRACTS FROM CURRENT LITERATURE

Pediatric Respiratory Tract Infections

Common Respiratory Tract Infections in Infants and Children. By John M. Adams, Jnl. Ped., 33:499-505, October 1948.

Adams, in a partial review of the work of the Commission on Acute Respiratory Diseases, points out that a "spectrum" of respiratory illnesses, probably of virus origin, emerges after the exclusion of infections of known cause (i.e. tuberculosis, diphtheria, beta hemolytic streptococcus infections, influenza, and psittacosis). The Commission has been able to separate four groups, all of which fuse with each other, but which present different clinical features and presumably are caused by different etiologic agents. These are:

1. The "common cold."
2. "Acute respiratory diseases." (ARD)
3. Nonbacterial exudative pharyngitis and tonsillitis.
4. Primary atypical pneumonia.

The author believes that a fifth, primary pneumonitis, might properly be added to this list.

He states that the first *cold* of the normal full-term newborn is usually a mild, almost afebrile, coryzal infection with an incubation period of 1-2 days, minimal physical findings, and an almost normal white count. *"Acute respiratory disease,"* though difficult to delineate sharply, usually appears as a more febrile illness, later in infancy, with a 5-6 day incubation period. It may be followed by secondary bacterial infections such as otitis media and cervical adenitis. *Non-bacterial exudative pharyngitis and tonsillitis* makes its first appearance at about one year of age, is a severe illness showing an abrupt onset with high fever, sometimes accompanied by convulsions. There is a moderate swelling of the pharyngeal lymphoid tissue, with a grey or whitish, discrete, exudate appearing after 12-18 hours. The course is self-limited to 3-4 days; complications are rare. The author states that this type of infection is more common than streptococcal pharyngitis, which produces a more confluent exudate, more edema and redness, and usually cervical adenitis. *Primary atypical pneumonia* parallels the adult disease, is usually milder, with x-ray findings out of proportion to signs and symptoms. *Primary pneumonitis* most frequently occurs as an epidemic disease in institutions, shows a wide range of involvement. Cough, dyspnea, and cyanosis, are prominent in severe cases. X-ray of the lungs shows diffused shadows, bronchial in distribution and usually widespread.

Influenza produced by the A virus may mimic any of the above. Most characteristically, there is acute pharyngitis with a mononuclear exudate.

Under the heading of treatment, Adams stresses the fact that cough is an effective defense mechanism against secondary pulmonary infection, and should not be interfered with unless the child's rest is seriously disturbed (as in measles and pertussis). He summarizes therapeutic measures as (1) postural drainage in the prone position to prevent bacterial pneumonias, especially in infants (2) "good hygiene and common sense" in the self-limited infections for which no drug is effective (3) penicillin, sulfonamides, or streptomycin for secondary bacterial infections and (4) prevention by reducing the amount of exposure.—*G.M.M.*

* * *

Infectious Croup

Infectious Croup: Etiology. By E. F. Rabe. Jnl. Ped., 2:255-265, September 1948.

This paper deals with a series of 347 cases of infectious croup admitted to the New Haven Hospital during the ten-year period 1937-1946. Patients were divided into one of three groups on admission, depending on evidence of downward progression of the disease. Those with upper respiratory tract obstruction and a hoarse voice with brassy cough were classed as laryngitis. Children with the above symptoms and in addition loud moist rales presumably originating in the trachea or upper bronchi were called laryngotracheitis. If, in addition to the above, patchy areas of fine bubbling or sibilant rales were found, the child was classified as laryngothracheopneumonitis.

In 22 cases, the etiologic agent was considered to be C. diphtheriae. In all of these, throat cultures grew out virulent diphtheria bacilli; in four out of the five deaths, post mortem cultures of the heart blood were made and all were positive. Three of these showed a pneumococcal bacteremia as well.

Twenty-eight cases were considered to be due to Hemophilus influenzae type B. Of these, 96.4 per cent had H. influenzae in the nasopharynx on admission, and 89.2 per cent had positive blood cultures (one or the other was positive on all the cases). The nose and throat cultures also showed a slightly greater than normal incidence of pneumococci (39 per cent) and a normal incidence of streptococci (8.8 per cent).

In the remaining 297 cases, the etiologic agent was less clear cut. The author classes these as "virus" croup on inferential and clinical grounds. Their clinical courses were so similar that a common single causative agent could be assumed. The bacteriologic findings from the nose and throat cultures (H. influenza 42.2 per cent, H. strep. 8.8 per cent, and pneumococci 52.2 per cent) were not significantly different statistically from those of a

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1. Follis, R. H., Jackson, D., Eliot, M. M., and Park, E. A.: *Am. Jour. Dis. Child.*, 66:1, July, 1943.
2. Stearns, G.: *Jour. Lancet*, 63:344, Nov., 1943.

very large group of "normal" patients suffering from non-infectious diseases (H. influenza 32.8 per cent, H. strep. 10.0 per cent, pneumococci 33.8 per cent. Only one positive blood culture (for pneumococcus) was found in the entire group. The serological types of the pneumococcus found did not correspond with the usual types causing pneumococcal disease in children. In the extremely severe cases which required tracheotomy, no single type of bacteria was found frequently enough to justify regarding it as the etiologic agent.

The correlation between the findings from nasopharyngeal cultures on admission, and later cultures from the larynx, trachea, and bronchi, proved to be very good. It was felt that the division of cases into laryngitis, laryngotracheitis, and laryngotracheopneumonitis was valuable from the standpoint of prognosis, but had no etiologic significance.—*G.M.M.*

To Demonstrate Color Television

Television in natural color for the teaching of surgery and medicine will have a pioneering demonstration at the annual meeting of the American Medical Association in Atlantic City in June, under arrangements recently concluded by Smith, Kline and French Laboratories and the University of Pennsylvania.

The sponsoring laboratories arranged for the development and manufacture of the color television equipment as a contribution to the advancement of medical teaching. To assure the suitability of the equipment for widespread use in medical schools under general teaching conditions the Medical School of the University of Pennsylvania is collaborating with the engineering research laboratories of the Columbia Broadcasting System in its design. Cooperating with CBS in the production of the equipment are Zenith Radio Corporation and Webster-Chicago Corporation.

For four days at the time of the A.M.A. meeting, actual surgery and diagnostic and other medical procedures will be televised in natural color while being performed by the faculty of the Medical School of the University of Pennsylvania and by the staff of the Atlantic City Hospital. The color television picture will be picked up at the hospital and beamed on a closed circuit direct to Convention Hall, where doctors will watch the transmissions on 20 color television receivers.

After the A.M.A. meeting, Smith, Kline and French Laboratories will conduct similar demonstrations at major medical meetings elsewhere to acquaint physicians throughout the country with the potentialities of this new teaching medium. It will enable large groups of medical students to study close up details of surgical techniques and medical procedures which now can be viewed by only a few at a time.

Congress on Obstetrics and Gynecology

The International and Fourth American Congress on Obstetrics and Gynecology will be held at the Hotel Statler, New York City, May 14-19, 1950, according to a recent announcement by the sponsoring group, the American Committee on Maternal Welfare. Five topics will be discussed in the scientific programs: physiology of human reproduction, pathology of human reproduction, social and economic problems, neoplastic diseases of the female reproductive system, and obstetric and gynecologic procedures. There will be numerous scientific and technical exhibits.

Inquiries on the congress should be addressed to Fred L. Adair, M.D., 24 West Ohio Street, Chicago 10, Illinois.

Fellowships Through National Foundation

A number of research and clinical fellowships are now available to physicians through the National Foundation for Infantile Paralysis, according to a recent press release from the foundation. Applications may be made to the foundation, 120 Broadway, New York 5, New York, at any time during the year. Selection of candidates will be made by committees composed of specialists in each field, and awards will be based on the individual needs of each applicant.

Research fellowships are available in virology, orthopedic surgery, pediatrics, epidemiology and neurology. They will emphasize advanced training in the basic sciences as they apply to the particular specialty and to research and experience in research, which need not be immediately related to poliomyelitis.

Clinical fellowships are available to physicians who wish to prepare for eligibility for certification by the American Board of Physical Medicine. Public health fellowships, providing for one year of postgraduate study leading to a Master of Public Health degree, are also available.

The A.M.A. committee now studying the nursing problem in the United States reports that there are now about 342,737 available nurses. It is indicated that 550,000 nurses will be required to care for the American people in 1960 if current standards are maintained. To accomplish this, 50,000 nurses must be graduated each year from 1951 to 1960. The largest number ever graduated was 44,700 in 1947.

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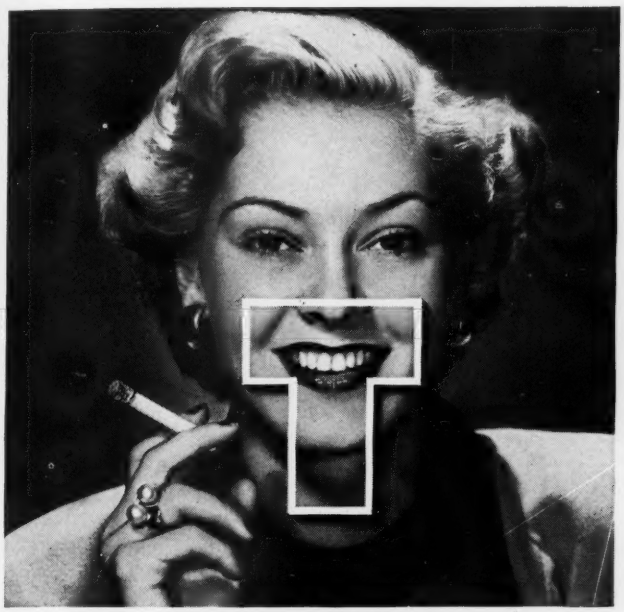

In a recent coast-to-coast test, hundreds of men and women smoked Camels—and only Camels—for 30 consecutive days. These people smoked on the average of one to two packages of Camels a day during the entire test period. Each week, throat specialists examined these Camel smokers. A total of 2,470 careful examinations were made by these doctors. After studying the results of the weekly examinations, these throat specialists reported:

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THE KANSAS PRESS LOOKS AT MEDICINE

For this section of the Journal the Editorial Board selects representative opinions from the press. These are presented to give the medical profession a review of current editorial expression and include opinions that are both favorable and unfavorable to medicine. The Editorial Board would appreciate hearing from the membership regarding selection of material for this column.

"Doing Time"

Doctors should have more consideration for their patients—not that this is any criticism of their standards and ability, for it isn't after the doctor takes professional charge of the patient whereof we speak, but rather during that timeless interim spent writhing in an anteroom chair waiting a turn.

If all the hours that have been idled away waiting on the doctor were added up and laid end to end they would not reach from here to there and back but there would be a couple of laps left over. And it seems to be that way in every physician's office. There may be men of medicine who don't have more cases than they can comfortably handle, but their species seem rare enough to be apt subjects for a medical journal.

If the patient's suspected ailment is anything aggravated by irritation he is sure to be fit material for the doctor by the time he has sweated out his waiting period, if not before. An incipient ulcer, high blood pressure or just plain "nerves," will get a first class boost when a 2:30 o'clock appointment drags along until well past four.

The patient, knowing full well that if he is late he will miss his turn, drops everything of the day's work and manages to hit 2:30 on the noggin, only to fritter away a couple of hours—often the minimum, it seems—before he has an opportunity to state his ills personally. In that interval he has not only scrutinized the overhead lighting fixtures, the rug pattern, his watch innumerable times, the dirt under his nails, an ancient copy of Hygeia and the office nurse (not necessarily in that order of course), but has also fine-tooth-combed magazines of such outmoded stature that he fully expects to see a picture of Warren G. Harding in inaugural dress jump out on the turn of the next page.

Granted, doctors are very busy people and they often run a patient through the mill and out again before he has time to learn to say neurocirculatory-asthenia in order to wade through the remainder of the day's clients and get home for a cold supper. But they can only take care of so many patients per day and surely they would be doing themselves a favor as well as the guy who pays the bill if they worked out a more prompt schedule system.

Even though a case frequently takes more time than was first anticipated, it seems unnecessary to have patients stacked up a dozen deep day after day. Just as many patients could be accommodated if each could utilize that interminable waiting period at his own affairs before coming to the office, then could get in and out and be gone when his turn did come.

Besides the office girl could toss out all those old magazines for lack of reluctant readers.—*Salina Journal, November 24, 1948.*

* * *

State Medicine

A recent survey of physicians showed a large majority in favor of a crusade against proposed federal health insurance legislation. They were opposed to such an extent they were willing to subscribe to a large fund to fight any such laws.

An eastern reporter recently investigated medical conditions in England where socialized medicine has been in force for some time and the facts brought out were startling.

Socialized, or free medicine and medical care, was one of the reforms demanded by the present English labor government. That its actual workability is far from assured, is evident from conditions now found there.

First of all, as in this country, there was already a shortage of doctors and nurses. The chance to get something "free" has made the present task almost impossible. Changing the profession from one of service ideals and ethical standards to one of mass administration has already lessened the desire for newcomers to enter the field of medicine.

Red tape and standardized procedure has almost eliminated individual care and attention. The doctor must spend as much or more time writing reports than he does with his patients, although one English doctor reported he saw 120 patients and made 25 calls a day. That was an average of two a minute. No time there for much personal research or care.

Whereas formerly a doctor's dealing with a patient was personal and confidential, every detail of interview and treatment is subject to public inspection. Patients have to wait in line for hours. Hospitals have long waiting lists, and chronic cases, borderline cases, and the aged must be passed over quickly. One English hospital had a waiting list of over 1800.

Obviously, whether they need attention or not, patients are getting sub-standard medical care and no one has yet come up with the answer to correct

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the condition. As long as people can get something for nothing they are going to get it. Those who need it must sacrifice some attention to those who are just taking advantage of it.

And yet some of them like it. They, the people own the service and one riveter actually told an eminent surgeon who was prescribing for him, "You must do as I say—you doctors are working for me now."

It is no wonder the American doctors are worried about the prospects of such an innovation in this country. It seems that some people think they know more about medical practice than the experts, the doctors. If it doesn't work with austere and liberal minded Englishmen, how can it be expected to work here?—*Leavenworth Times, December 16, 1948.*

* * *

AMA's Negativism

The American Medical Association has authorized a 3½ million dollar fund to fight compulsory national medical insurance, which is certainly within its rights but also an indication that the powerful organization is not in tune with the temper of the times.

There is a lot to be said on either side of the compulsory insurance question. It is evident, however, that the great bulk of the citizenry is interested in some kind of a plan which will ease the burden of serious illness upon the family budget.

That the AMA refuses to recognize. Almost at the same time it approved a big war chest for the battle against compulsory medical plans, it refused to support the Blue Cross and Blue Shield programs of voluntary insurance on a national scale. Instead it proposes to concentrate on selling the "advantages of the American system in securing a wide distribution of a high quality of medical care." That will hardly replace the dents created in the individual's pocketbook by extended sickness, however generally recognized are the wonders of American medical science.

In short, the AMA to stave off compulsory action fostered by the federal government must come up with something besides a negative program. It is combating an irresistible urge for greater security upon the part of the individual citizen—security against poverty in old age, security against interruptions in weekly income, security against dislocation of the family's budget through unexpected though necessary expenditures, and the like. The urge won't be conquered by attempting to maintain the status quo, because the present social order is dedicated to attainment of that desired goal of greater security.

In this case, the AMA's best defense of organized medicine would be a good offense. Its steadfast refusal to sponsor, or endorse, a national plan of voluntary hospital and medical insurance or something similar can only lead to what the medical profession fears most.—*Parsons Sun, December 4, 1948.*

* * *

Substandard Medicine

Among the many interpretations of the Truman election victory is the belief it means some kind of socialized medicine for this country. Last week a survey of physicians in Kansas City showed a large majority in favor of a crusade against proposed federal health insurance legislation. The majority was willing to contribute to a fund being sought by the American Medical Association at $25 a member to fight any federal law. They warn strongly against it as being costly, socialistic, full of red tape, freedom-depriving to health seekers and a dire un-American prospect.

Perhaps American doctors are alarmed by a recent warning from Britain. A distinguished American physician observed, at first hand, what is happening in medical practice in England under the Labor government's act giving "free" service. He pointed out that the act did not create a single extra doctor, nurse, hospital bed or any other facility. But the demand for the allegedly "free" service has been enormous. British doctors must see an average of 100 patients a day. As a consequence, this observer reported, such "overloading has made it necessary for the physician to shy away from the chronically ill, the aged, the children, the pre-tubercular, and the border line mental case in filling his panel. The vast amount of unnecessary medical care is crowding out the very group that the plan was touted as serving."

Finally, this American physician found that the quality of practice is declining in other ways as well. Services which the American people regard as routine—such as obstetrical and dental anesthesia—are not considered necessary and are not covered by the British act.

All of which probably proves that government-controlled medicine is substandard medicine, no matter where it is tried. But despite the efforts of the A.M.A. in the United States, it may well be tried here. Some doctors see as inevitable the trend toward nationalization of health service. Protests of other groups in other years failed to stop laws for tariffs, farm crop subsidies, unemployment insurance, school lunches and many other semi-socialistic movements. Nonetheless the American Medical Association is going to make it a crusade. When the new Congress opens its debate on the health insurance bill, with the blessing of President Truman, the country may expect to see a drawn-out battle.

Meanwhile, the wide acceptance of the Blue Cross and the Blue Shield non-profit plans for hospital

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and surgical services by pre-payment, or of commercial insurance for such use, may prove to be the right way to accomplish the purpose. If socialized medicine fails to work in England, with all the British austerity and liberal leanings, the chances are against it in this country.—*E. T. L. in Emporia Gazette, December 13, 1948.*

BOOK REVIEWS

Anesthesia: Principles and Practice. By Alice M. Hunt, R.N. Published by G. P. Putnam's Sons, New York City. 148 pages. Price $2.60.

The author has presented a brief and concise outline on the principles of anesthesia. It is recommended that the physician and nurse particularly read Chapter Five on immediate preoperative care as it will explain the care of the patient by the nurse. This particular aspect has heretofore not been stressed as much as it should be. Further, the author, under method of anesthesia, includes intravenous and rectal methods as a form of general anesthesia. It is wrong to consider an intravenous anesthetic as a general or peripheral depressant. Intravenous anesthetics are central depressants.

As an outline for physicians the book may have no appeal. It is recommended for all nurses as a manual for understanding the fundamental principles of anesthesia.

The book is concise and well written. The bibliography is fair.—*P.H.L.*

* * *

Blood Transfusion. By Elmer L. DeGowin, Robert C. Hardin and John D. Alsever. Published by W. B. Saunders Company, Philadelphia. 587 pages, 200 diagrammatic drawings. Price $9.00.

In recent years there has been a marked increase in the therapeutic use of blood and its derivatives, and a steady increase in the number of blood banks. The authors state that it has been their purpose to include material which is of interest to physicians, medical students and laboratory technicians, and they have succeeded in doing so. The entire field of blood transfusion is covered although the major portion of the text has been devoted to the various aspects of whole blood transfusion. Other subjects discussed are laboratory procedures, the preparation and administration of plasma, preparation and administration of the blood derivatives and plasma substitutes, transfusion services, and transfusion apparatus. The book is very well written.—*S.J.W.*

* * *

Clinical Aspects and Treatment of Surgical Infections. By Frank L. Meleney. Published by W. B. Saunders Company, Philadelphia. 840 pages, 287 figures. Price $12.

This book definitely fills a unique gap in our surgical literature. The author has contributed and collected a large amount of material which will be of practical value in the treatment of patients. He gives a systemic review of the various areas, organs and tissues of the body inflicted with necrotizing and pyogenic organisms which produce the so-called surgical infections. Effort is made to show the close relationship between the pathogenesis of bacterial infections and surgical therapy. From a clinical point of view, the discussions on the indications and contra-indications of the most recent antibiotics as an adjunct to surgical therapy are especially excellent and practical. In the various chapters there are illustrative and complete case histories from which the author draws his conclusions. Complete bibliography follows each chapter.—*M.J.R.*

* * *

Obstetric Analgesia and Anesthesia. By F. F. Snyder. Published by W. B. Saunders Company, Philadelphia. 401 pages, 114 figures, 18 tables. Price $6.50.

This is an excellent and critical review of drugs used for obstetrical analgesia and anesthesia with their effect on fetal pulmonary physiology and pathology as well as their effect on labor and the maternal organism. The book summarizes our present-day knowledge on the subject and should be of great interest to obstetricians and all others interested in obstetrical anesthesia.—*R.L.N.*

* * *

Detailed Atlas of the Head and Neck. By Raymond C. Truex and Carl E. Kellner (artist). Published by Oxford University Press, New York. 162 pages, 147 illustrations.

This volume consists of 147 skillful and artistic drawings of Professor Truex's detailed dissections of

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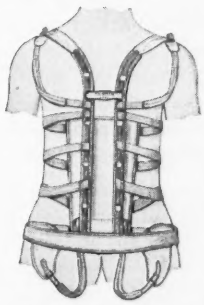

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anatomical configurations of the head and neck. The dissections are arranged and carried out in a unique fashion, making easy for the student a pictorial reconstruction of a given region in a three-dimensional view.

In addition to a series of dissections showing regional anatomy and topographical relationships, there are detailed drawings of the skull and vertebrae, showing attachments of muscles and tendons, a series of frontal sections related to bony landmarks, and a series of transverse sections, also oriented to bony landmarks. Particularly well presented are the series of drawings showing the cranial cavity and its contents. The relation of brain stems, cerebral veins and vessels, to meninges, cranial vault and foramina is displayed clearly in the minutest detail.

No discussion or statement of practical significance or application is made. The drawings are presented in a thorough and artistically clear fashion, giving the student an excellent appraisal of the anatomy of the head and neck.—*M.S.*

* * *

Essentials of Gynecologic Endocrinology. By Gardner M. Riley. Published by Caduceus Press, Ann Arbor. 205 pages, 31 figures. Price $3.00.

This book is written in brief form, approaching moderate amplification of an outline. Emphasis is placed on a discussion of the physiology of the endocrine glands and their target organs, along with a discussion of diagnostic methods and a list of endocrine therapeutic agents. As a result, only about 60 of the 200 pages are devoted to clinical problems of an endocrine nature and their specific treatment. Endocrinology of the male is discussed in one chapter. This seems definitely superfluous in a work of this length.

The section on endocrine physiology is clearly written and easily understood. It contains lists of many good references as do all sections of this book. No mention is made of the role of the hypothalamus in endocrine physiology, which constitutes a rather serious lack of completeness.

The section entitled "Clinical" is well written but it seems some parts might be confusing to the uninitiated because so much material is covered in so little space that adequate discussion is almost prohibited.

The section on "Diagnostic Procedures, Sex Hormone Chemistry and Endocrine Preparations" is well written. It contains a list of many of the commonly used endocrine preparations and detailed instructions for many of the diagnostic procedures employed in endocrinology. Included are directions for the silver carbonate stain for vaginal smears which was developed in the laboratory with which the author is associated.

Whereas this book provides an adequate discussion of the basic essentials of each of the topics, it would seem that its very brevity might create some confusion, particularly for one approaching the subject of endocrinology for the first time. A good understanding of the subject would probably require additional reading, particularly as regards clinical endocrinology. No discussion of endocrinology as it applies to sterility is made in this book specifically. —*W.J.D.*

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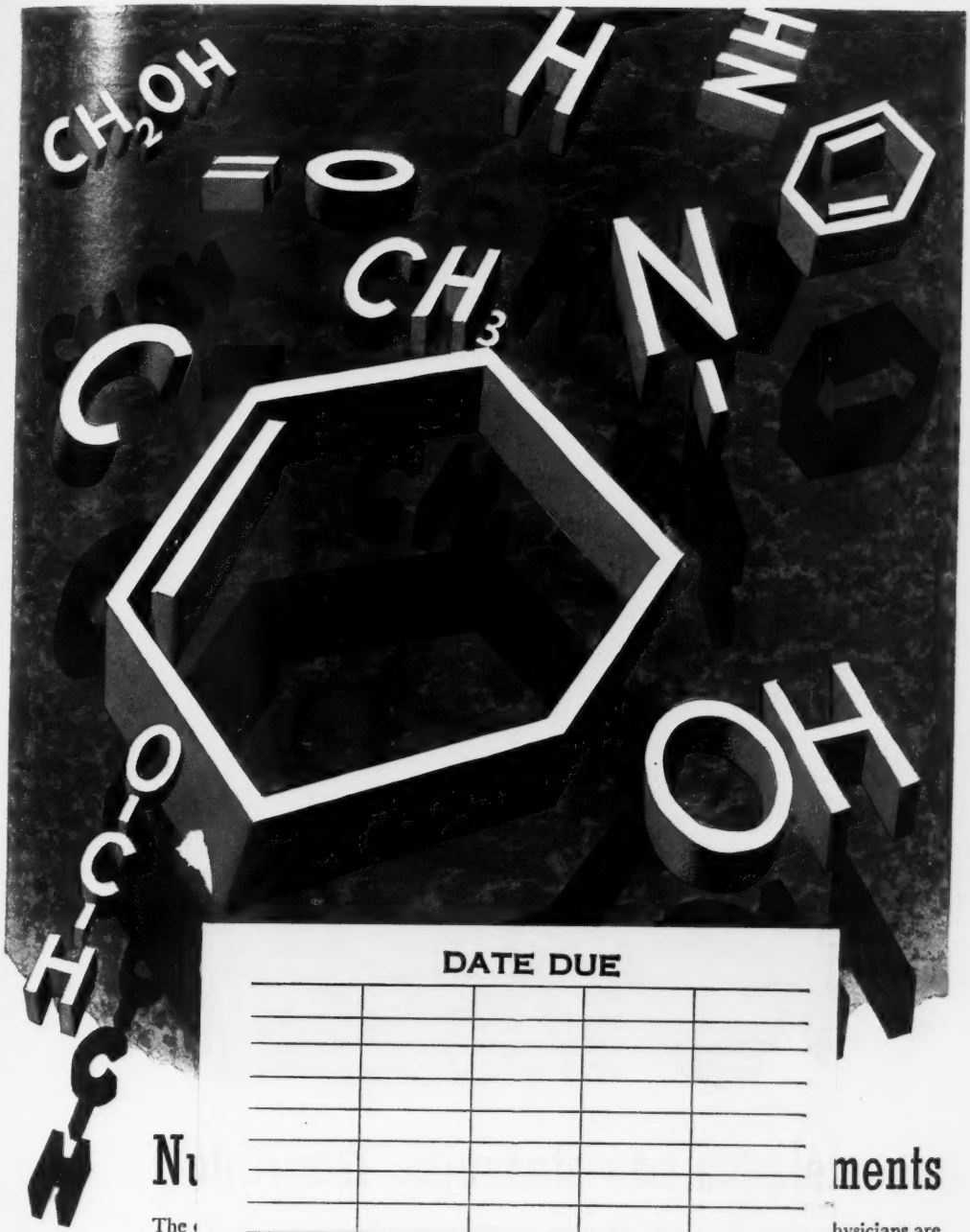

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